

**NSX-AJ300**

U

**NSX-AJ305**

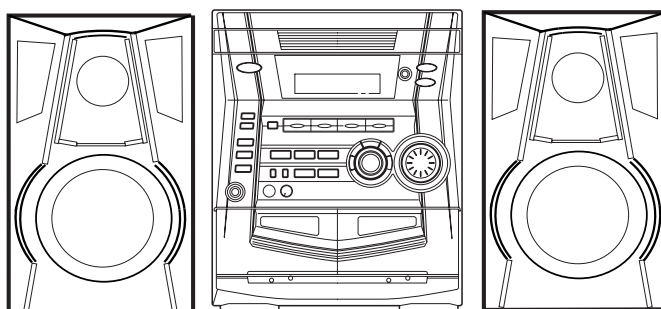
U

**NSX-SZ300**

LH,EZ

**NSX-SZ305**

EZ



# SERVICE MANUAL

COMPACT DISC  
STEREO SYSTEM

BASIC TAPE MECHANISM : ZZM-3 PR1NM  
BASIC CD MECHANISM : BZG-5 ZD3NM

| SYSTEM               | CD<br>CASSEIVER | SPEAKER              | REMOTE<br>CONTROLLER |
|----------------------|-----------------|----------------------|----------------------|
| NSX-AJ300<U>         | CX-NAJ300       | SX-NAJ302            | RC-ZAS02             |
| NSX-AJ305<U>         | CX-NAJ305       | SX-NAJ302<br>SX-R145 |                      |
| NSX-SZ300<br><LH,EZ> | CX-NSZ300       | SX-NSZ302            |                      |
| NSX-SZ305<EZ>        | CX-NSZ305       |                      |                      |

- If requiring information about the CD mechanism, see Service Manual of BZG-5, (S/M Code No. 09-00C-353-3N2).

**aiwa**

S/M Code No. 09-012-440-5R1

# SPECIFICATIONS

## Main unit CX-NAJ300/CX-NSZ300/CX-NAJ305/CX-NSZ305

### <FM tuner section>

|                                 |                                 |
|---------------------------------|---------------------------------|
| <b>Tuning range</b>             | 87.5 MHz to 108 MHz             |
| <b>Usable sensitivity (IHF)</b> | U, LH: 13.2 dBf<br>EZ: 16.8 dBf |
| <b>Antenna terminals</b>        | 75 ohms (unbalanced)            |

### <AM/MW tuner section>

|                           |                                                                       |
|---------------------------|-----------------------------------------------------------------------|
| <b>Tuning range</b>       | 530 kHz to 1710 kHz (10 kHz step)<br>531 kHz to 1602 kHz (9 kHz step) |
| <b>Usable sensitivity</b> | 350 $\mu$ V/m                                                         |
| <b>Antenna</b>            | Loop antenna                                                          |

### <LW tuner section><EZ>

|                           |                    |
|---------------------------|--------------------|
| <b>Tuning range</b>       | 144 kHz to 290 kHz |
| <b>Usable sensitivity</b> | 1400 $\mu$ V/m     |
| <b>Antenna</b>            | Loop antenna       |

### <Amplifier section>

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Power output</b>              | Rated<br>U: 60 W + 60 W (50 Hz – 20 kHz,<br>THD less than 1%, 6 ohms)<br>LH: 62 W + 62 W<br>(1 kHz, THD 1%, 6 ohms)<br>EZ: 32 W + 32 W<br>(6 ohms, THD 1%, 1 kHz/DIN 45500)<br>Reference<br>U: 75 W + 75 W<br>(1 kHz, THD less than 10%, 6 ohms)<br>LH: 80 W + 80 W<br>(1 kHz, THD 10%, 6 ohms)<br>EZ: 40 W + 40 W<br>(6 ohms, THD 10%, 1 kHz/DIN 45324)<br>EZ: DIN MUSIC POWER: 120 W + 120 W |
| <b>Total harmonic distortion</b> | U: 0.08 % (30 W, 1 kHz, 6 ohms,<br>DIN AUDIO)<br>LH: 0.08 % (40 W, 1 kHz, 6 ohms,<br>DIN AUDIO)<br>EZ: 0.08 % (20 W, 1 kHz, 6 ohms,<br>DIN AUDIO)                                                                                                                                                                                                                                              |
| <b>Inputs</b>                    | VIDEO/AUX: 500 mV                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Outputs</b>                   | SPEAKERS: 6 ohms or more<br>SURROUND SPEAKERS <305U><br>8 ohms to 16 ohms<br>PHONES: 32 ohms or more                                                                                                                                                                                                                                                                                           |

### <Cassette deck section>

|                           |                                                                      |
|---------------------------|----------------------------------------------------------------------|
| <b>Track format</b>       | 4 tracks, 2 channels stereo                                          |
| <b>Frequency response</b> | 50 Hz – 15 kHz                                                       |
| <b>Recording system</b>   | AC bias                                                              |
| <b>Heads</b>              | Deck 1: Playback x 1<br>Deck 2: Recording/Playback x 1,<br>erase x 1 |

### <Compact disc player section>

|                              |                                           |
|------------------------------|-------------------------------------------|
| <b>Laser</b>                 | Semiconductor laser ( $\lambda$ = 780 nm) |
| <b>D-A converter</b>         | 1 bit dual                                |
| <b>Signal-to-noise ratio</b> | 85 dB (1 kHz, 0 dB)                       |
| <b>Harmonic distortion</b>   | 0.05 % (1 kHz, 0 dB)                      |

### <General>

|                                            |                                                                                                                              |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>Power requirements</b>                  | U: 120 V AC, 60 Hz<br>LH: 120 V/220-230 V/240 V AC<br>(switchable), 50/60 Hz<br>EZ: 230 V AC, 50 Hz                          |
| <b>Power consumption</b>                   | 300U: 70 W<br>305U: 85 W<br>LH: 90 W<br>EZ: 75 W                                                                             |
| <b>Power consumption in standby mode</b>   | With ECO mode on: 0.6 W<br>With ECO mode off:<br>U: 20 W<br>LH: 19 W<br>EZ: 17 W                                             |
| <b>Dimensions of main unit (W x H x D)</b> | 260 x 324 x 351 mm<br>(10 <sup>1</sup> / <sub>4</sub> x 12 <sup>7</sup> / <sub>8</sub> x 13 <sup>7</sup> / <sub>8</sub> in.) |
| <b>Weight of main unit</b>                 | 300U: 6.4 kg (14 lbs 2 oz.)<br>305U: 6.5 kg (14 lbs 5 oz.)<br>LH: 6.9 kg<br>EZ: 5.8 kg                                       |

## Front Speakers SX-NAJ302/SX-NSZ302

### <U: SX-NAJ302>

### <LH, EZ: SX-NSZ302>

|                                    |                                                                                                                                                                                         |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Speaker system</b>              | 3 way, bass reflex (magnetic shielded type)                                                                                                                                             |
| <b>Speaker units</b>               | Woofer: 160 mm (6 <sup>3</sup> / <sub>8</sub> in.) cone<br>Tweeter: 60 mm (2 <sup>3</sup> / <sub>8</sub> in.) cone<br>Super tweeter: 20 mm (1 <sup>3</sup> / <sub>16</sub> in.) ceramic |
| <b>Impedance</b>                   | 6 ohms                                                                                                                                                                                  |
| <b>Output sound pressure level</b> | 87 dB/W/m                                                                                                                                                                               |
| <b>Dimensions (W x H x D)</b>      | 230 x 324 x 235 mm<br>(9 <sup>1</sup> / <sub>8</sub> x 12 <sup>7</sup> / <sub>8</sub> x 9 <sup>3</sup> / <sub>8</sub> in.)                                                              |
| <b>Weight</b>                      | U: 3.5 kg (7 lbs 11 oz.)<br>LH: 4.5 kg<br>EZ: 4.3 kg                                                                                                                                    |

## Surround Speakers SX-R145 (NSX-AJ305 only)

|                               |                                                                                               |
|-------------------------------|-----------------------------------------------------------------------------------------------|
| <b>Speaker system</b>         | 1 way, bass reflex                                                                            |
| <b>Speaker units</b>          | Full range: 80 mm (3 <sup>1</sup> / <sub>4</sub> in.) cone                                    |
| <b>Impedance</b>              | 8 ohms                                                                                        |
| <b>Dimensions (W x H x D)</b> | 100 x 132 x 116 mm<br>(4 x 5 <sup>1</sup> / <sub>4</sub> x 4 <sup>5</sup> / <sub>8</sub> in.) |
| <b>Weight</b>                 | 0.5 kg (1 lbs 2 oz.)                                                                          |

• Design and specifications are subject to change without notice.

• The word "BBE" and the "BBE symbol" are trademarks of BBE Sound, Inc.

Under license from BBE Sound, Inc.

## PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

### WARNING!!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

### VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

### WARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

### CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

### ATTENTION

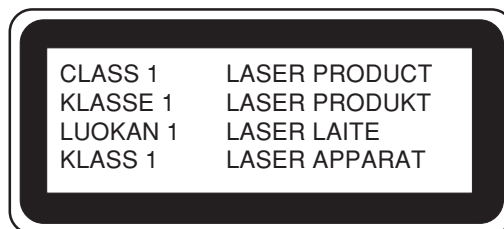
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

### ADVARSEL

Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.

The CLASS 1 LASER PRODUCT label is located on the rear exterior.

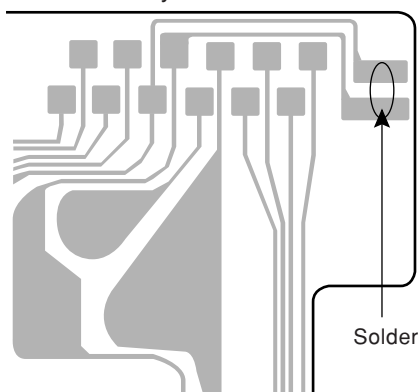


### Precaution to replace Optical block (KSS-213F)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

- 1) After the connection, remove solder shown in the right figure.

(KSS – 213F)  
PICKUP Assy PWB



## NOTE ON BEFORE STARTING REPAIR

### 1. Forced discharge of electrolytic capacitor of power supply block

When repair is going to be attempted in the set that uses relay circuit in the power supply block, electric potential is kept charged across the electrolytic capacitors (C101, 102) even though AC power cord is removed. If repair is attempted in this condition, secondary defect can occur.

In order to prevent the secondary trouble, perform the following measures before starting repair work.

#### Discharge procedure

- ① Remove the AC power cord.
- ② Connect a discharging resistor at an end of lead wire that has clips at both ends. Connect the other end of the lead wire to metal chassis.
- ③ Contact the other end of the discharging resistor to the positive (+) side (+VH) of C101. (For two seconds)
- ④ Contact the same end of the discharging resistor as step ③ to the negative (-) side (-VH) of C102 in the same way. (For two seconds)
- ⑤ Check that voltage across C101 and C102 has decreased to 1 V or less using a multimeter or an oscilloscope.

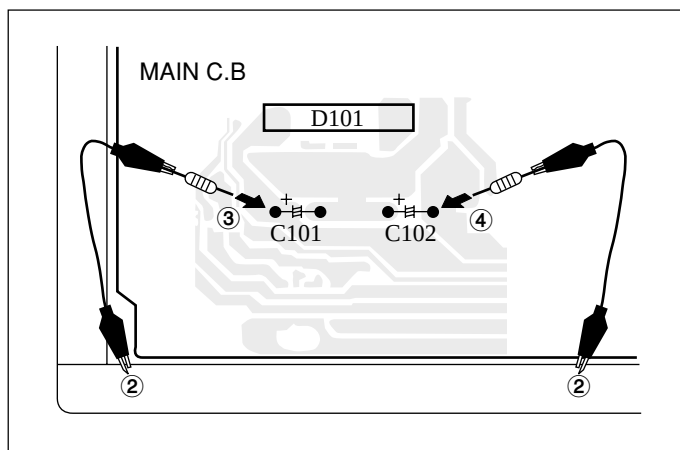


Fig-1

Select a discharging resistor referring to the following table.

| Charging voltage (V)<br>(C101, 102) | Discharging<br>resistor ( $\Omega$ ) | Rated power (W) | Parts number   |
|-------------------------------------|--------------------------------------|-----------------|----------------|
| 25-48                               | 100                                  | 3               | 87-A00-247-090 |
| 49-140                              | 220                                  | 5               | 87-A00-232-090 |

**Note:** The reference numbers (C101, C102) of the electrolytic capacitors can change depending on the models. Be sure to check the reference numbers of the charging capacitors on schematic diagram before starting the discharging work.

### 2. Check items before exchanging the MICROCOMPUTER

Be sure to check the following items before exchanging the MICROCOMPUTER. Exchange the MICROCOMPUTER after confirming that the MICROCOMPUTER is surely defective.

#### 2-1. Regarding the HOLD terminal of the MICROCOMPUTER

When the HOLD terminal (INPUT) of the MICROCOMPUTER is “H”, the MICROCOMPUTER is judged to be operating correctly. When this terminal is “L”, the main power cannot be turned on. Therefore, be sure to check the terminal voltage of the HOLD terminal before exchange.

When the MICROCOMPUTER is not defective, the HOLD terminal can also go “L” when the POWER AMPLIFIER has any abnormalities that triggers the abnormality detection circuit on the MAIN C. B. that sets the HOLD terminal to “L”.

#### • Good or no good judgement of the MICROCOMPUTER

- ① Turn on the AC main power.
- ② Confirm that the main power is turned on and the HOLD terminal of the MICROCOMPUTER keeps the “H” level or not.
- ③ When the HOLD terminal is “L” level, the abnormality detection circuit is judged to be working correctly and the MICROCOMPUTER is judged to be good.

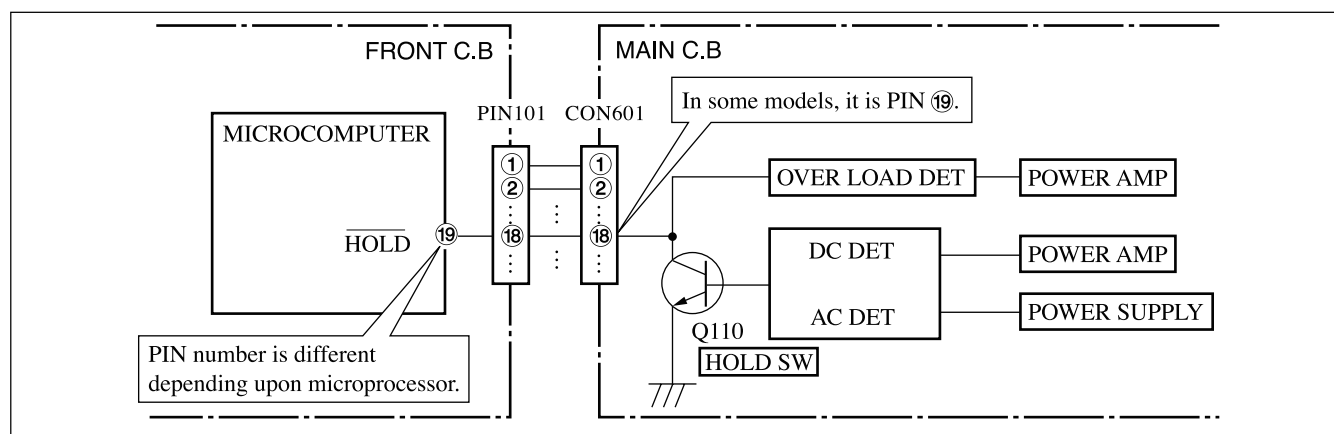


Fig-2-1

In such a case, check also if the POWER AMPLIFIER circuit or power supply circuit has any abnormalities or not.

## 2-2. Regarding reset

There are cases that the machine does not work correctly because the MICROCOMPUTER is not reset even though the AC power cord is re-inserted, or the software reset (pressing the STOP key + POWER key) is performed.

When the above described phenomenon occurs, it can lead to wrong judgement as if the MICROCOMPUTER is defective and to exchange the MICROCOMPUTER. In such a case, perform the forced-reset by the following procedure and check good or no good of the MICROCOMPUTER.

- ① Remove the AC power cord.

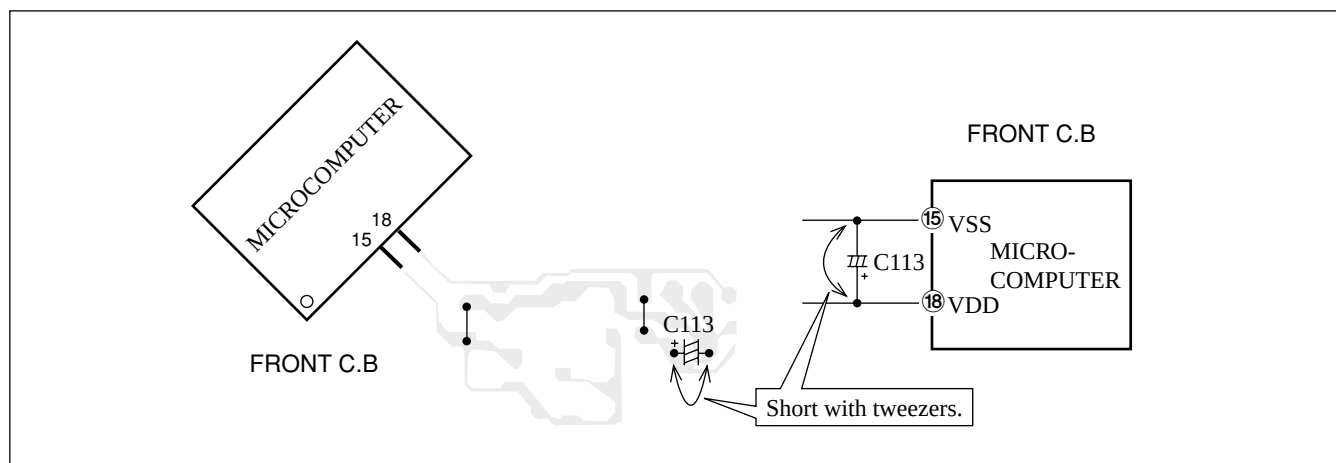


Fig-2-2

- ② Short both ends of the electrolytic capacitor C113 that is connected to VDD of the MICROCOMPUTER with tweezers.
- ③ Connect the AC power cord again. If the MICROCOMPUTER returns to the normal operation, the MICROCOMPUTER is good.

**Note:** The reference number or MICROCOMPUTER pin number of transistor (Q110) and electrolytic capacitor (C113) can change depending on the models. Be sure to check the reference numbers on schematic diagram before starting the discharging work.

## 2-3. Confirmation of soldering state of MICROCOMPUTER

Check the soldering state of the MICROCOMPUTER in addition to the above described procedures. Be sure to exchange the MICROCOMPUTER after surely confirming that the trouble is not caused by poor soldering but the MICROCOMPUTER itself.

# ELECTRICAL MAIN PARTS LIST

| REF. NO.   | PART NO.       | KANRI NO.                            | DESCRIPTION | REF. NO. | PART NO.       | KANRI NO. | DESCRIPTION                  |
|------------|----------------|--------------------------------------|-------------|----------|----------------|-----------|------------------------------|
| IC         |                |                                      |             | C19      | 87-A12-036-000 |           | CAP, E 2200-63 M SMG<U,LH>   |
|            | 87-A21-419-040 | C-IC,NJM14558MD-TE2                  |             | C19      | 87-A12-776-090 |           | CAP, E 2200-50 M 85 SKR<EZ>  |
|            | 87-A21-893-040 | C-IC,NJM14558V-TE2                   |             | C20      | 87-A12-036-000 |           | CAP, E 2200-63 M SMG<U,LH>   |
|            | 87-A21-695-010 | IC,LA1845L                           |             | C20      | 87-A12-776-090 |           | CAP, E 2200-50 M 85 SKR<EZ>  |
|            | 87-070-127-110 | IC,LC72131D                          |             | C21      | 87-A12-777-090 |           | CAP, E 3300-25 M 85 SKR      |
|            | 87-A20-440-040 | C-IC,BU1920FS<305EZ>                 |             | C22      | 87-A12-777-090 |           | CAP, E 3300-25 M 85 SKR      |
|            | 87-A21-218-110 | IC,NJL64H380A                        |             | C25      | 87-A12-072-080 |           | CAP, E 100-25 SMG            |
|            | 87-A21-401-040 | C-IC,M61503FP                        |             | C26      | 87-A12-072-080 |           | CAP, E 100-25 SMG            |
|            | 8B-NF9-602-030 | C-IC,UPD780228GF-078-3BA<305EZ>      |             | C27      | 87-A12-072-080 |           | CAP, E 100-25 SMG            |
|            | 8B-NF9-601-030 | C-IC,UPD780226GF-021-3BA<U,LH,300EZ> |             | C28      | 87-A12-072-080 |           | CAP, E 100-25 SMG            |
|            | 87-A21-269-010 | IC,EW732                             |             | C30      | 87-A12-095-080 |           | CAP, E 100-50 SMG            |
| TRANSISTOR |                |                                      |             | C31      | 87-A12-062-080 |           | CAP,E 100-10 SMG             |
|            | 87-A30-559-010 | TR,CSB1370EF                         |             | C32      | 87-012-286-080 |           | C-CAP, U 0.01-25             |
|            | 87-A30-492-080 | TR,2SC5343G                          |             | C33      | 87-A12-062-080 |           | CAP,E 100-10 SMG<U>          |
|            | 87-A30-076-080 | C-TR,2SC3052F                        |             | C34      | 87-A12-072-080 |           | CAP, E 100-25 SMG            |
|            | 87-A30-075-080 | C-TR,2SA1235F                        |             | C35      | 87-A12-071-080 |           | CAP, E 47-25 SMG             |
|            | 87-A30-107-070 | C-TR,CMBT5401                        |             | C36      | 87-A12-067-080 |           | CAP, E 330-16 SMG            |
|            | 87-A30-484-080 | C-TR,KRA102S                         |             | C38      | 87-012-286-080 |           | C-CAP, U 0.01-25             |
|            | 87-026-610-080 | TR,KTC3198GR                         |             | C60      | 87-A12-089-080 |           | CAP,E 3.3-50 SMG             |
|            | 87-A30-190-080 | TR,CC5551                            |             | C61      | 87-A12-071-080 |           | CAP,E 47-25 SMG              |
|            | 87-A30-106-040 | C-TR,CMBT5551                        |             | C83      | 87-A12-074-080 |           | CAP, E 470-25 SMG<U,LH>      |
|            | 87-A30-162-010 | FET,2SK2937                          |             | C83      | 87-A12-068-080 |           | CAP, E 470-16 SMG<EZ>        |
|            | 87-A30-091-080 | FET,2SJ460                           |             | C97      | 87-010-831-080 |           | C-CAP,U 0.1-16 Z F           |
|            | 87-A30-090-080 | FET,2SK2541                          |             | C101     | 87-012-279-080 |           | C-CAP,U 2700P-50 B<U,LH>     |
|            | 87-A30-062-080 | C-TR,KRC104S                         |             | C101     | 87-012-278-080 |           | C-CAP,U 2200P-50 K B<EZ>     |
|            | 87-A30-495-080 | TR,2SA1981Y                          |             | C102     | 87-012-279-080 |           | C-CAP,U 2700P-50 B<U,LH>     |
|            | 87-A30-234-080 | TR,CSC4115BC                         |             | C102     | 87-012-278-080 |           | C-CAP,U 2200P-50 K B<EZ>     |
|            | 89-327-143-080 | C-TR,2SC2714 (O)                     |             | C103     | 87-A12-084-080 |           | CAP,E 0.022-50 SMG           |
|            | 87-A30-489-080 | C-TR,KRA107S                         |             | C104     | 87-A12-084-080 |           | CAP,E 0.022-50 SMG           |
|            | 89-503-602-080 | C-FET,2SK360E                        |             | C105     | 87-012-277-080 |           | C-CAP,U 1800P-50 K B GRM     |
|            | 87-A30-086-040 | C-TR,CSD1306E                        |             | C106     | 87-012-277-080 |           | C-CAP,U 1800P-50 K B GRM     |
|            | 87-A30-494-080 | TR,2SA1980G                          |             | C107     | 87-A12-089-080 |           | CAP,E 3.3-50 SMG             |
|            | 87-A30-528-010 | TR,2SB1686                           |             | C108     | 87-A12-089-080 |           | CAP,E 3.3-50 SMG             |
|            | 87-A30-529-010 | TR,2SD2642                           |             | C109     | 87-012-195-080 |           | C-CAP, U 100P-50 CH<EZ>      |
|            | 87-A30-087-080 | C-FET,2SK2158                        |             | C110     | 87-012-195-080 |           | C-CAP,U 100P-50 CH<EZ>       |
|            | 87-A30-074-080 | C-TR,RT1P141C                        |             | C111     | 87-A12-077-080 |           | CAP,E 33-35 SMG              |
|            | 87-A30-582-080 | TR,CDA1585BC                         |             | C112     | 87-A12-077-080 |           | CAP,E 33-35 SMG              |
|            | 87-A30-468-080 | C-TR,KRC102S-RTK                     |             | C113     | 87-012-195-080 |           | C-CAP,U 100P-50 CH<U,EZ>     |
|            | 87-026-213-080 | C-TR,DTC114YK<U,LH,300EZ>            |             | C113     | 87-A10-596-080 |           | C-CAP,S 100P-50 J CH<LH>     |
|            | 87-A30-288-040 | C-TR,DTC114YKA<305EZ>                |             | C114     | 87-012-195-080 |           | C-CAP,U 100P-50 CH<U,EZ>     |
| DIODE      |                |                                      |             | C114     | 87-A10-596-080 |           | C-CAP,S 100P-100 J CH<LH>    |
|            | 87-A40-393-090 | DIODE,1N5402GW (F20)                 |             | C117     | 87-A12-368-080 |           | C-CAP,S 0.1-50 Z F           |
|            | 87-A40-553-080 | DIODE,1N4003 LES                     |             | C118     | 87-A12-368-080 |           | C-CAP,S 0.1-50 Z F           |
|            | 87-A40-776-080 | ZENER,UZ27BSD                        |             | C119     | 87-012-286-080 |           | C-CAP,U 0.01-25              |
|            | 87-A40-764-080 | ZENER,UZ10BSC                        |             | C120     | 87-012-286-080 |           | C-CAP,U 0.01-25              |
|            | 87-A40-270-080 | C-DIODE,MC2838                       |             | C123     | 87-010-177-080 |           | C-CAP,S 820P-25 J SL C2012   |
|            | 87-A40-269-080 | C-DIODE,MC2836                       |             | C124     | 87-010-177-080 |           | C-CAP,S 820P-25 J SL C2012   |
|            | 87-A40-291-080 | DIODE,1N4148M (CPT)                  |             | C133     | 87-012-282-080 |           | C-CAP,U 4700P-50             |
|            | 87-A40-749-080 | ZENER,UZ5.6BSB                       |             | C140     | 87-012-278-080 |           | C-CAP,U 2200P-50             |
|            | 87-017-149-080 | ZENER,HZS6A2L                        |             | C186     | 87-010-759-080 |           | C-CAP,U, 0.1-25F             |
|            | 87-A40-454-090 | DIODE,1N5393 GW 12.5                 |             | C187     | 87-010-866-080 |           | CAP,E 10-63 M VX<U,LH>       |
|            | 87-A40-747-080 | ZENER,UZ5.1BSB                       |             | C187     | 87-A12-091-080 |           | CAP,E 10-50 SMG<EZ>          |
|            | 87-A40-739-080 | ZENER,UZ2.7BSA                       |             | C188     | 87-010-866-080 |           | CAP,E 10-63 M VX<U,LH>       |
|            | 87-A40-748-080 | ZENER,UZ5.6BSA                       |             | C188     | 87-A12-091-080 |           | CAP,E 10-50 SMG<EZ>          |
|            | 87-A40-455-090 | DIODE,RL203GW<U,LH>                  |             | C223     | 87-012-272-080 |           | C-CAP,U 680P-50 B<EZ>        |
| MAIN C.B   |                |                                      |             | C224     | 87-012-272-080 |           | C-CAP,U 680P-50 B<EZ>        |
| C3         | 87-012-368-080 | C-CAP,S 0.1-50 Z F                   |             | C225     | 87-012-368-080 |           | C-CAP,S 0.1-50 Z F           |
| C4         | 87-012-368-080 | C-CAP,S 0.1-50 Z F                   |             | C226     | 87-012-368-080 |           | C-CAP,S 0.1-50 Z F           |
| C5         | 87-012-368-080 | C-CAP,S 0.1-50 Z F                   |             | C227     | 87-012-368-080 |           | C-CAP,S 0.1-50 Z F           |
| C6         | 87-012-368-080 | C-CAP,S 0.1-50 Z F                   |             | C228     | 87-012-368-080 |           | C-CAP,S 0.1-50 Z F           |
| C9         | 87-010-759-080 | C-CAP,U 0.1-25 Z F                   |             | C229     | 87-012-191-080 |           | C-CAP,U 0.015-50 Z F GRM<EZ> |
| C10        | 87-010-759-080 | C-CAP,U 0.1-25 Z F                   |             | C230     | 87-012-191-080 |           | C-CAP,U 0.015-50 Z F GRM<EZ> |
| C11        | 87-010-759-080 | C-CAP,U 0.1-25 Z F                   |             | C231     | 87-012-286-080 |           | CAP, U 0.01-25<EZ>           |
| C12        | 87-010-759-080 | C-CAP,U 0.1-25 Z F                   |             | C232     | 87-012-286-080 |           | CAP, U 0.01-25<EZ>           |
|            |                |                                      |             | C235     | 87-A12-094-080 |           | CAP,E 47-50 SMG<305U>        |
|            |                |                                      |             | C236     | 87-A12-094-080 |           | CAP,E 47-50 SMG<305U>        |
|            |                |                                      |             | C241     | 87-010-831-080 |           | C-CAP,U 0.1-16 Z F           |
|            |                |                                      |             | C301     | 87-012-275-080 |           | C-CAP,U 1200P-50 K B GRM     |
|            |                |                                      |             | C302     | 87-012-275-080 |           | C-CAP,U 1200P-50 K B GRM     |
|            |                |                                      |             | C303     | 87-012-275-080 |           | C-CAP,U 1200P-50 K B GRM     |

| REF. NO. | PART NO.       | KANRI NO. | DESCRIPTION              | REF. NO. | PART NO.       | KANRI NO. | DESCRIPTION                      |
|----------|----------------|-----------|--------------------------|----------|----------------|-----------|----------------------------------|
| C304     | 87-012-275-080 |           | C-CAP,U 1200P-50 K B GRM | C784     | 87-012-286-080 |           | CAP, U 0.01-25                   |
| C307     | 87-A12-062-080 |           | CAP,E 100-10 SMG         | C785     | 87-012-286-080 |           | CAP, U 0.01-25                   |
| C308     | 87-A12-062-080 |           | CAP,E 100-10 SMG         | C786     | 87-012-286-080 |           | CAP, U 0.01-25                   |
| C309     | 87-012-188-080 |           | C-CAP,U 47P-50 J CH      | C788     | 87-012-167-080 |           | C-CAP,U 5P-50 CH                 |
| C310     | 87-012-188-080 |           | C-CAP,U 47P-50 J CH      | C789     | 87-A12-052-080 |           | C-CAP,S 0.033-25 J B<U,LH>       |
| C313     | 87-012-284-080 |           | CAP, U 6800P-50          | C789     | 87-016-118-080 |           | C-CAP,U 0.022-25 J B GRM<EZ>     |
| C314     | 87-012-284-080 |           | CAP, U 6800P-50          | C790     | 87-A12-052-080 |           | C-CAP,S 0.033-25 J B<U,LH>       |
| C315     | 87-A12-062-080 |           | CAP,E 100-10 SMG         | C790     | 87-016-118-080 |           | C-CAP,U 0.022-25 J B GRM<EZ>     |
| C317     | 87-A12-085-080 |           | CAP,E 0.33-50 SMG        | C791     | 87-010-831-080 |           | C-CAP,U 0.1-16F                  |
| C318     | 87-A12-085-080 |           | CAP,E 0.33-50 SMG        | C792     | 87-012-286-080 |           | CAP, U 0.01-25                   |
| C326     | 87-010-787-080 |           | C-CAP,U 0.022-25 K B     | C793     | 87-A12-090-080 |           | CAP,E 4.7-50 SMG                 |
| C327     | 87-010-831-080 |           | C-CAP,U 0.1-16 Z F       | C795     | 87-012-286-080 |           | CAP, U 0.01-25                   |
| C350     | 87-012-286-080 |           | C-CAP,U 0.01-25 K B<EZ>  | C796     | 87-012-286-080 |           | CAP, U 0.01-25                   |
| C360     | 87-A12-087-080 |           | CAP,E 1-50 SMG           | C797     | 87-A12-091-080 |           | CAP,E 10-50 SMG                  |
| C399     | 87-A10-039-080 |           | C-CAP, U 470P-50 J CH    | C798     | 87-012-286-080 |           | CAP, U 0.01-25                   |
| C401     | 87-A12-083-080 |           | CAP,E 0.1-50 SMG         | C799     | 87-A12-093-080 |           | CAP,E 33-50 SMG<U,LH,300EZ>      |
| C402     | 87-A12-083-080 |           | CAP,E 0.1-50 SMG         | C799     | 87-010-265-080 |           | CAP,E 33-16 M 11L SME<305EZ>     |
| C403     | 87-012-193-080 |           | C-CAP,U 82P-50 CH        | C800     | 87-010-829-080 |           | CAP, U 0.047-16                  |
| C404     | 87-012-193-080 |           | C-CAP,U 82P-50 CH        | C801     | 87-A12-089-080 |           | CAP,E 3.3-50 SMG                 |
| C405     | 87-012-286-080 |           | CAP, U 0.01-25           | C802     | 87-010-829-080 |           | CAP, U 0.047-16                  |
| C406     | 87-012-286-080 |           | CAP, U 0.01-25           | C803     | 87-010-787-080 |           | CAP, U 0.022-25 K B              |
| C407     | 87-012-286-080 |           | CAP, U 0.01-25           | C804     | 87-A12-062-080 |           | CAP,E 100-10 SMG                 |
| C408     | 87-012-286-080 |           | CAP, U 0.01-25           | C807     | 87-A12-086-080 |           | CAP,E 0.47-50 SMG                |
| C409     | 87-012-278-080 |           | C-CAP,U 2200P-50 B       | C808     | 87-A12-087-080 |           | CAP,E 1-50 SMG                   |
| C410     | 87-012-278-080 |           | C-CAP,U 2200P-50 B       | C809     | 87-A12-087-080 |           | CAP,E 1-50 SMG                   |
| C411     | 87-A12-091-080 |           | CAP,E 10-50 SMG          | C810     | 87-010-831-080 |           | C-CAP,U 0.1-16F                  |
| C412     | 87-A12-091-080 |           | CAP,E 10-50 SMG          | C814     | 87-012-286-080 |           | CAP, U 0.01-25                   |
| C452     | 87-A12-069-080 |           | CAP,E 22-25 SMG          | C815     | 87-A12-086-080 |           | CAP,E 0.47-50 SMG                |
| C453     | 87-012-279-080 |           | C-CAP,U 2700P-50 B       | C816     | 87-A12-086-080 |           | CAP,E 0.47-50 SMG                |
| C454     | 87-012-279-080 |           | C-CAP,U 2700P-50 B       | C818     | 87-012-276-080 |           | C-CAP,U 1500P-50 K B<EZ>         |
| C455     | 87-012-279-080 |           | C-CAP,U 2700P-50 B       | C821     | 87-A12-091-080 |           | CAP,E 10-50 SMG                  |
| C456     | 87-012-286-080 |           | CAP, U 0.01-25           | C823     | 87-010-177-080 |           | C-CAP,S 820P-50 J SL C2012<U,LH> |
| C457     | 87-A12-361-080 |           | CAP,M 5600P-100 J CP     | C823     | 87-012-349-080 |           | C-CAP,S 1000P-50 J CH GRM<EZ>    |
| C458     | 87-012-274-080 |           | CHIP CAP,U 1000P-50B     | C824     | 87-A12-090-080 |           | CAP,E 4.7-50 SMG                 |
| C459     | 87-012-271-080 |           | CAP, U 560P-50           | C825     | 87-010-596-080 |           | C-CAP,S 0.047-16 K R C2012       |
| C460     | 87-010-831-080 |           | C-CAP,U 0.1-16 Z F       | C831     | 87-A12-092-080 |           | CAP,E 22-50 SMG<EZ>              |
| C461     | 87-012-158-080 |           | C-CAP,S 390P-50 J CH GRM | C842     | 87-012-286-080 |           | CAP, U 0.01-25                   |
| C462     | 87-012-158-080 |           | C-CAP,S 390P-50 J CH GRM | C844     | 87-012-286-080 |           | CAP, U 0.01-25                   |
| C470     | 87-018-127-080 |           | CAP, CER 470P-50V        | C850     | 87-A12-071-080 |           | CAP,E 4.7-25 SMG                 |
| C605     | 87-012-280-080 |           | C-CAP,U 3300P-50 K B     | C851     | 87-012-286-080 |           | CAP, U 0.01-25                   |
| C606     | 87-012-280-080 |           | C-CAP,U 3300P-50 K B     | C852     | 87-012-286-080 |           | CAP, U 0.01-25                   |
| C609     | 87-010-785-080 |           | C-CAP,U 0.015-25 K B GRM | C853     | 87-012-286-080 |           | CAP, U 0.01-25                   |
| C610     | 87-010-785-080 |           | C-CAP,U 0.015-25 K B GRM | C858     | 87-010-831-080 |           | C-CAP,U 0.1-16 Z F               |
| C611     | 87-A12-084-080 |           | CAP,E 0.22-50 SMG        | C859     | 87-010-831-080 |           | C-CAP,U 0.1-16 Z F<EZ>           |
| C612     | 87-A12-084-080 |           | CAP,E 0.22-50 SMG        | C860     | 87-012-286-080 |           | C-CAP,U 0.01-25 K B<EZ>          |
| C613     | 87-A12-084-080 |           | CAP,E 0.22-50 SMG        | C869     | 87-012-286-080 |           | C-CAP,U 0.01-25 K B<305EZ>       |
| C614     | 87-A12-084-080 |           | CAP,E 0.22-50 SMG        | C870     | 87-012-274-080 |           | C-CAP,U 1000P-50 K B<305EZ>      |
| C615     | 87-012-172-080 |           | CAPACITOR CHIP U 10P CH  | C871     | 87-012-199-080 |           | C-CAP,U 220P-50 J CH<305EZ>      |
| C616     | 87-016-459-080 |           | CAP,E 470-10 M SMG       | C872     | 87-012-199-080 |           | C-CAP,U 220P-50 J CH<305EZ>      |
| C617     | 87-016-459-080 |           | CAP,E 470-10 M SMG       | C873     | 87-A10-039-080 |           | C-CAP,U 470P-50 J CH<305EZ>      |
| C618     | 87-A12-091-080 |           | CAP,E 10-50 SMG          | C874     | 87-A12-091-080 |           | CAP,E 10-50 SMG<305EZ>           |
| C620     | 87-010-263-080 |           | CAP,E 100-10 M 11L SME   | C875     | 87-010-759-080 |           | C-CAP,U 0.1-25 Z F<305EZ>        |
| C623     | 87-A12-372-080 |           | CAP,M 0.047-100 JP       | C876     | 87-A12-091-080 |           | CAP,E 10-50 SMG                  |
| C624     | 87-A12-372-080 |           | CAP,M 0.047-100 JP       | C877     | 87-012-286-080 |           | C-CAP,U 0.01-25 K B<305EZ>       |
| C630     | 87-016-669-080 |           | C-CAP,S 0.1-25 K B       | C878     | 87-012-184-080 |           | C-CAP,U 33P-50 J CH<305EZ>       |
| C631     | 87-012-281-080 |           | C-CAP,U 3900P-50 K B GRM | C879     | 87-012-180-080 |           | C-CAP,U 22P-50 J CH<305EZ>       |
| C632     | 87-012-281-080 |           | C-CAP,U 3900P-50 K B GRM | C901     | 87-018-145-080 |           | CAP,TC-U 6.8P-50 CH<U,LH>        |
| C633     | 87-A11-070-080 |           | C-CAP,U 0.033-16 K B     | C904     | 87-012-286-080 |           | C-CAP,U 0.01-25<U,LH>            |
| C634     | 87-A11-070-080 |           | C-CAP,U 0.033-16 K B     | C905     | 87-012-286-080 |           | C-CAP,U 0.01-25<U,LH>            |
| C661     | 87-012-336-080 |           | C-CAP,U 330P-50 J SL     | C907     | 87-012-286-080 |           | C-CAP,U 0.01-25<U,LH>            |
| C662     | 87-012-336-080 |           | C-CAP,U 330P-50 J SL     | C908     | 87-A10-915-080 |           | C-CAP,U 1000P-25 J CH<U,LH>      |
| C669     | 87-012-274-080 |           | C-CAP,U 1000P-50 K B<EZ> | C909     | 87-012-286-080 |           | C-CAP,U 0.01-25<U,LH>            |
| C670     | 87-012-274-080 |           | C-CAP,U 1000P-50 K B<EZ> | C910     | 87-012-174-080 |           | C-CAP,U 12P-50 J CH<U,LH>        |
| C677     | 87-012-286-080 |           | CAP, U 0.01-25           | C911     | 87-012-170-080 |           | C-CAP,U 8P-50 CH<U,LH>           |
| C771     | 87-A12-062-080 |           | CAP,E 100-10 SMG         | C912     | 87-012-195-080 |           | C-CAP,U 100P-50CH<U,LH>          |
| C772     | 87-012-286-080 |           | CAP, U 0.01-25           | C913     | 87-012-286-080 |           | C-CAP,U 0.01-25<U,LH>            |
| C779     | 87-010-949-080 |           | C-CAP,S 0.01-50 J B<EZ>  | C914     | 87-012-166-080 |           | C-CAP,U 4P-50 C CH<U,LH>         |
| C780     | 87-010-949-080 |           | C-CAP,S 0.01-50 J B<EZ>  | C915     | 87-012-174-080 |           | C-CAP,U 12P-50 J CH<U,LH>        |
| C782     | 87-012-286-080 |           | CAP, U 0.01-25           | C916     | 87-012-180-080 |           | C-CAP,U 22P-50 CH<U,LH>          |
| C783     | 87-012-286-080 |           | CAP, U 0.01-25           | C917     | 87-012-186-080 |           | C-CAP,U 39P-50 CH<U,LH>          |

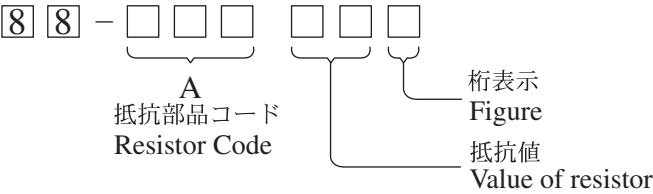
| REF. NO. | PART NO.       | KANRI NO. | DESCRIPTION                         | REF. NO.  | PART NO.       | KANRI NO. | DESCRIPTION                        |
|----------|----------------|-----------|-------------------------------------|-----------|----------------|-----------|------------------------------------|
| C918     | 87-A10-039-080 |           | C-CAP,U 470P-50 J CH<U,LH>          | L906      | 88-ZA1-603-010 |           | COIL,FM-OSC-U 2G<U,LH>             |
| C921     | 87-012-195-080 |           | C-CAP,U 100P-50CH<U,LH>             | L941      | 87-A50-020-010 |           | COIL,ANT LW (COI) 252KHZ<EZ>       |
| C922     | 87-012-174-080 |           | C-CAP,U 12P-50 J CH CHJ<U,LH>       | L942      | 87-A50-019-010 |           | COIL,OSC LW (COI) 856KHZ<EZ>       |
| C940     | 87-012-286-080 |           | C-CAP,U 0.01-25 K B<EZ>             | L951      | 8A-NF8-667-010 |           | COIL,AM PACK 4 (TOK)<U,LH>         |
| C942     | 87-012-165-080 |           | C-CAP,U 3P-50 C CH<EZ>              | L951      | 8A-NF8-668-010 |           | COIL,AM PACK 2 (TOK)<EZ>           |
| C947     | 87-012-286-080 |           | C-CAP,U 0.01-25 K B<EZ>             | R129      | 87-A00-257-080 |           | RES,M/F 0.15-1W J<300U>            |
| C948     | 87-A10-039-080 |           | C-CAP,U 470P-50 J CH<EZ>            | R129      | 87-A00-258-080 |           | RES,M/F 0.22-1W J<EZ>              |
| C952     | 87-012-286-080 |           | C-CAP,U 0.01-25 K B<EZ>             | R129      | 87-A00-262-080 |           | RES,M/F 0.15-2W J<LH,305U>         |
| C957     | 87-012-174-080 |           | C-CAP,U 12P-50 J CH<EZ>             | R130      | 87-A00-257-080 |           | RES,M/F 0.15-1W J<300U>            |
| C958     | 87-012-286-080 |           | C-CAP,U 0.01-25 K B<EZ>             | R130      | 87-A00-258-080 |           | RES,M/F 0.22-1W J<EZ>              |
| C959     | 87-010-831-080 |           | C-CAP,U,0.1-16F                     | R130      | 87-A00-262-080 |           | RES,M/F 0.15-2W J<LH,305U>         |
| C960     | 87-010-831-080 |           | C-CAP,U,0.1-16F                     | R131      | 87-A00-257-080 |           | RES,M/F 0.15-1W J<300U>            |
| C961     | 87-012-167-080 |           | C-CAP,U 5P-50 CH<U,LH>              | R131      | 87-A00-258-080 |           | RES,M/F 0.22-1W J<EZ>              |
| C962     | 87-A12-087-080 |           | CAP,E 1-50 SMG<EZ>                  | R131      | 87-A00-262-080 |           | RES,M/F 0.15-2W J<LH,305U>         |
| C963     | 87-015-785-080 |           | CHIP CAPACITOR, 0.1-25 Z F          | R132      | 87-A00-257-080 |           | RES,M/F 0.15-1W J<300U>            |
| C971     | 87-A12-067-080 |           | CAP,E 330-16 SMG                    | R132      | 87-A00-258-080 |           | RES,M/F 0.22-1W J<EZ>              |
| C972     | 87-A12-090-080 |           | CAP,E 4.7-50 SMG                    | R132      | 87-A00-262-080 |           | RES,M/F 0.15-2W J<LH,305U>         |
| C973     | 87-012-286-080 |           | CAP, U 0.01-25                      | R243      | 87-A00-440-050 |           | RES,220-1/2W J RP<U,LH>            |
| C974     | 87-012-286-080 |           | CAP, U 0.01-25                      | R243      | 87-A00-439-050 |           | RES,180-1/2W J RP<300EZ>           |
| C979     | 87-012-195-080 |           | C-CAP,U 100P-50CH                   | R243      | 87-A00-999-050 |           | RES,180-1/2W J BLT2J<305EZ>        |
| C981     | 87-A12-071-080 |           | CAP,E 47-25 SMG                     | R244      | 87-A00-440-050 |           | RES,220-1/2W J RP<U,LH>            |
| C982     | 87-010-831-080 |           | C-CAP,U,0.1-16F                     | R244      | 87-A00-439-050 |           | RES,180-1/2W J RP<300EZ>           |
| C983     | 87-012-286-080 |           | CAP, U 0.01-25 K B                  | R244      | 87-A00-999-050 |           | RES,180-1/2W J BLT2J<305EZ>        |
| C984     | 87-012-286-080 |           | CAP, U 0.01-25 K B                  | R245      | 87-A00-440-050 |           | RES,220-1/2W J RP<U>               |
| C985     | 87-012-195-080 |           | C-CAP,U 100P-50 J CH<EZ>            | R245      | 87-A00-441-050 |           | RES,270-1/2W J RP<LH>              |
| C987     | 87-012-286-080 |           | CAP, U 0.01-25 K B                  | R245      | 87-A00-439-050 |           | RES,180-1/2W J RP<300EZ>           |
| C989     | 87-012-286-080 |           | C-CAP, U 0.01-25 K B<EZ>            | R245      | 87-A00-999-050 |           | RES,180-1/2W J BLT2J<305EZ>        |
| C991     | 87-012-176-080 |           | C-CAP,U 15P-50 J CH                 | R246      | 87-A00-440-050 |           | RES,220-1/2W J RP<U>               |
| C992     | 87-012-176-080 |           | C-CAP,U 15P-50 J CH                 | R246      | 87-A00-441-050 |           | RES,270-1/2W J RP<LH>              |
| C993     | 87-012-274-080 |           | CHIP CAP,U 1000P-50B                | R246      | 87-A00-439-050 |           | RES,180-1/2W J RP<300EZ>           |
| C995     | 87-012-274-080 |           | CHIP CAP,U 1000P-50B                | R246      | 87-A00-999-050 |           | RES,180-1/2W J BLT2J<305EZ>        |
| C997     | 87-010-831-080 |           | C-CAP,U,0.1-16F                     | R790      | 87-012-286-080 |           | CAP, U 0.01-25                     |
| C998     | 87-A12-071-080 |           | CAP,E 47-25 SMG                     | R991      | 87-012-195-080 |           | C-CAP,U 100P-50CH                  |
| C999     | 87-A11-155-080 |           | CAP,TC U 0.01-16 Z F                | R993      | 87-012-195-080 |           | C-CAP,U 100P-50CH                  |
| CF831    | 87-008-261-010 |           | FILTER, SFE10.7MA5-A<U,LH>          | R995      | 87-012-195-080 |           | C-CAP,U 100P-50CH                  |
| CF831    | 87-008-423-010 |           | FILTER, CF SFE10.7MS3G-A<EZ>        | SFR451    | 87-024-435-080 |           | SFR,33K H RH063MC                  |
| CF832    | 87-008-261-010 |           | FILTER, SFE10.7MA5-A<U,LH>          | SFR452    | 87-024-435-080 |           | SFR,33K H RH063MC                  |
| CF832    | 82-785-747-010 |           | CF,MS2 GHY,R<EZ>                    | TC942     | 87-A91-774-080 |           | TRIMMER, PLY 30P 6.8X5.4 CDYL<EZ>  |
| CN301    | 87-A60-620-010 |           | CONN,3P V 2MM JMT                   | TH101     | 87-A91-042-080 |           | C-THMS,100K 55001                  |
| CN351    | 87-A60-625-010 |           | CONN,8P V 2MM JMT                   | TH102     | 87-A91-042-080 |           | C-THMS,100K 55001                  |
| CN601    | 87-099-719-010 |           | CONN,30P TYK-B(X)                   | WH1       | 87-A90-510-010 |           | HLDR,WIRE 2.5-9P                   |
| CN602    | 87-A60-131-010 |           | CONN,6P V FE                        | W99       | 8A-NF9-609-010 |           | F-CABLE,9P 2.5 480MM<U,EZ>         |
| CNA001   | 8A-NF8-653-010 |           | CONN ASSY,9P TID-A(480)<LH>         | X862      | 87-A70-307-010 |           | VIB,XTAL 4.332MHZ CSA-309ST<305EZ> |
| D902     | 87-A40-128-080 |           | C-VARI-CAP,HVU202A<U,LH>            | X992      | 87-A70-306-010 |           | VIB,XTAL 4.500MHZ CSA-309ST        |
| D903     | 87-A40-128-080 |           | C-VARI-CAP,HVU202A<U,LH>            |           |                |           |                                    |
| FC602    | 88-906-251-110 |           | FF-CABLE, 6P 1.25                   | FRONT C.B |                |           |                                    |
| FFE831   | A8-6ZA-19H-030 |           | 6ZA-1 FEMENM<EZ>                    |           |                |           |                                    |
| J201     | 87-A61-480-010 |           | JACK,DIA 6.3BLK ST W/SW<U,LH,300EZ> | C108      | 87-010-785-080 |           | C-CAP,U 0.015-25 K B GRM           |
| J201     | 87-A60-488-010 |           | JACK,DIA 6.3BLK ST W/SW<305EZ>      | C153      | 87-010-787-080 |           | C-CAP,U 0.022-25 K B               |
| J203     | 87-A60-238-010 |           | TERMINAL,SP 4P (MSC)                | C154      | 87-A12-078-040 |           | CAP,E 47-35 SMG                    |
| J205     | 87-A60-881-010 |           | JACK,PIN 2P MSP 242V05 PBSN<305U>   | C155      | 87-010-404-040 |           | CAP,E 4.7-50 M 11L SME             |
| J602     | 87-A60-881-010 |           | JACK,PIN 2P MSP 242V05 PBSN         | C156      | 87-010-404-040 |           | CAP,E 4.7-50 M 11L SME             |
| J831     | 87-A60-202-010 |           | TERMINAL,ANT 4P MSP-154V-02<U,LH>   |           |                |           |                                    |
| J832     | 87-A60-403-010 |           | TERMINAL,ANT PAL 2P HSP-312V05<EZ>  | C301      | 87-012-278-080 |           | C-CAP,U 2200P-50 K B               |
| JR123    | 87-012-195-080 |           | C-CAP,U 100P-50 J CH<U,EZ>          | C351      | 87-A10-353-080 |           | C-CAP,U 0.22-10 K B                |
| JR123    | 87-A10-596-080 |           | C-CAP,S 100P-100 J CH<LH>           | C361      | 87-012-274-080 |           | C-CAP,U 1000P-50 K B               |
| JR124    | 87-012-195-080 |           | C-CAP,U 100P-50 J CH<U,EZ>          | C362      | 87-012-274-080 |           | C-CAP,U 1000P-50 K B               |
| JR124    | 87-A10-596-080 |           | C-CAP,S 100P-100 J CH<LH>           | C371      | 87-012-274-080 |           | C-CAP,U 1000P-50 K B               |
| L201     | 87-A50-610-010 |           | COIL,1UH K(MDEC)                    |           |                |           |                                    |
| L202     | 87-A50-610-010 |           | COIL,1UH K(MDEC)                    | C372      | 87-012-274-080 |           | C-CAP,U 1000P-50 K B               |
| L451     | 87-007-342-010 |           | COIL,OSC 85KHZ BIAS                 | C601      | 87-010-382-040 |           | CAP,E 22-25 SME                    |
| L801     | 87-A50-608-010 |           | COIL,FM DET-N(TOK)                  | C801      | 87-A10-804-080 |           | C-CAP,S 0.1-25 J B                 |
| L802     | 87-A91-551-010 |           | FLTR,PCFJZH-450 L(TOK)              | C802      | 87-010-316-080 |           | C-CAP,S 33P-50 J CH GRM            |
| L811     | 87-005-847-080 |           | COIL,2.2UH CECS                     | C803      | 87-012-280-080 |           | C-CAP,U 3300P-50 K B               |
| L832     | 87-005-847-080 |           | COIL,2.2UH CECS                     |           |                |           |                                    |
| L861     | 87-005-847-080 |           | COIL,2.2UH K CECS<305EZ>            | C804      | 87-A10-592-080 |           | C-CAP,S 0.015-50 J B               |
| L902     | 88-ZA1-602-110 |           | COIL,FM-RF-U2 2G<U,LH>              | C805      | 87-012-184-080 |           | C-CAP,U 33P-50 J CH                |
| L903     | 88-ZA1-601-010 |           | COIL,FM-RF-U1 2G<U,LH>              | C806      | 87-012-274-080 |           | C-CAP,U 1000P-50 K B               |
| L904     | 87-005-847-080 |           | COIL,2.2UH (CECS)<U,LH>             | C807      | 87-012-274-080 |           | C-CAP,U 1000P-50 K B               |
| L905     | 88-ZA1-624-010 |           | COIL,FM IFT 7-6.2 (COILS)<U,LH>     | C808      | 87-010-544-040 |           | CAP,E 0.1-50 M 11L SME             |
|          |                |           |                                     | C809      | 87-010-404-040 |           | CAP,E 4.7-50 SME                   |
|          |                |           |                                     | C810      | 87-012-286-080 |           | C-CAP,U 0.01-25 K B                |
|          |                |           |                                     | C811      | 87-A12-052-080 |           | C-CAP,S 0.033-25 J B               |

| REF. NO. | PART NO.       | KANRI NO. | DESCRIPTION                    | REF. NO. | PART NO.       | KANRI NO. | DESCRIPTION                     |
|----------|----------------|-----------|--------------------------------|----------|----------------|-----------|---------------------------------|
| C901     | 87-012-195-080 |           | C-CAP,U 100P-50 CH             | S345     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ>  |
| C902     | 87-012-195-080 |           | C-CAP,U 100P-50 CH             | S345     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>        |
| C903     | 87-012-195-080 |           | C-CAP,U 100P-50 CH             | S346     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ>  |
| C904     | 87-012-195-080 |           | C-CAP,U 100P-50 CH             | S346     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>        |
| C905     | 87-012-195-080 |           | C-CAP,U 100P-50 CH             | S347     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ>  |
| C906     | 87-012-195-080 |           | C-CAP,U 100P-50 CH             | S347     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>        |
| C907     | 87-012-195-080 |           | C-CAP,U 100P-50 CH             | S348     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ>  |
| C908     | 87-012-195-080 |           | C-CAP,U 100P-50 CH             | S348     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>        |
| C909     | 87-012-195-080 |           | C-CAP,U 100P-50 CH             | S349     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ>  |
| C910     | 87-012-195-080 |           | C-CAP,U 100P-50 CH             | S349     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>        |
| C911     | 87-012-274-080 |           | C-CAP,U 1000P-50 K B           | S350     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>        |
| C912     | 87-010-831-080 |           | C-CAP,U 0.1-16 Z F             | S351     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>        |
| C913     | 87-A10-189-040 |           | CAP,E 220-10 M 5L              | S352     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>        |
| C914     | 87-A10-189-040 |           | CAP,E 220-10 M 5L              | S361     | 87-A92-041-010 |           | SW, RTRY XRE012103PVB30F-24     |
| C915     | 87-010-831-080 |           | C-CAP,U 0.1-16 Z F             | S371     | 87-A92-040-010 |           | SW, RTRY XRE012103PVB30F-12     |
| C916     | 87-010-831-080 |           | C-CAP,U 0.1-16 Z F             |          |                |           |                                 |
| C917     | 87-010-831-080 |           | C-CAP,U 0.1-16 Z F             | PT C.B   |                |           |                                 |
| C919     | 87-012-286-080 |           | C-CAP,U 0.01-25 K B            |          |                |           |                                 |
| C920     | 87-010-829-080 |           | C-CAP,U 0.047-16 Z F           | C85      | 87-010-831-080 |           | C-CAP,U 0.1-16 Z F<EZ>          |
| C921     | 87-012-282-080 |           | C-CAP,U 4700P-50 K B           | CN1      | 87-A61-110-010 |           | CONN,9P V TID-A<LH>             |
| C951     | 87-012-172-080 |           | C-CAP,U 10P-50 D CH            | △ PT1    | 8B-NFY-610-010 |           | PT, BNF-Y U<300U>               |
| C952     | 87-010-854-080 |           | C-CAP,S 560P-50 J CH           | △ PT1    | 8B-NFY-612-010 |           | PT, BNF-9 U<305U>               |
| C953     | 87-012-349-080 |           | C-CAP,S 1000P-50 J CH GRM      | △ PT1    | 8B-NFY-615-010 |           | PT, BNF-9 LH<LH>                |
| C961     | 87-010-378-040 |           | CAP,E 10-16 M 11L SME          | △ PT1    | 8B-NFY-616-010 |           | PT, BNF-9 EZ-LOW<EZ>            |
| C962     | 87-012-336-080 |           | C-CAP,U 330P-50 J SL           | △ PT2    | 8B-NFY-663-010 |           | PT, SUB BNF H (TAM)<LH>         |
| C963     | 87-010-831-080 |           | C-CAP,U 0.1-16 Z F             | △ PT81   | 8B-NFY-661-010 |           | PT, SUB BNF U (TAM)<U>          |
| CN104    | 87-A60-057-010 |           | CONN,11P V 9604S-11C           | △ PT81   | 8B-NFY-665-010 |           | PT, SUB BNF E (TAM)<300EZ>      |
| CN701    | 87-099-720-010 |           | CONN,30P BLK TYK-B(P)          | △ PT81   | 8B-MA6-675-010 |           | PT, SUB BMA E (VRK)<305EZ>      |
| CN731    | 87-099-196-010 |           | CONN,8P V BLK 6216             | △ RY1    | 87-A91-339-010 |           | RELAY,AC DC12V G5PA-2<LH>       |
| FC104    | 88-911-101-110 |           | FF-CABLE,11P 1.25              | △ RY81   | 87-A92-072-010 |           | RELAY,AC DC12V HRM3H-S-1POLE<U> |
| FC731    | 88-908-301-110 |           | FF-CABLE,8P 1.25               | △ RY81   | 87-A91-418-010 |           | RELAY,AC 12V G5PA-1-M<EZ>       |
| FL901    | 8B-NFY-605-010 |           | FL,BJ814GNK                    | △ S1     | 87-A90-165-010 |           | SW,SL 1-2-3 SWS2301<LH>         |
| L951     | 87-A50-655-010 |           | COIL,CLK 4.19M (TOKO)7KLY      | △ T1     | 87-A60-317-010 |           | TERMINAL, 1P MSC<LH>            |
| LED209   | 87-A40-317-080 |           | LED,SLR-342VCT31 RED           | △ T2     | 87-A60-317-010 |           | TERMINAL, 1P MSC<LH>            |
| S321     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ> | △ T81    | 87-A60-317-010 |           | TERMINAL, 1P MSC<U,EZ>          |
| S321     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>       | △ T82    | 87-A60-317-010 |           | TERMINAL, 1P MSC<U,EZ>          |
| S322     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ> | WH81     | 87-A90-510-010 |           | HLD, WIRE 2.5-9P<U,EZ>          |
| S322     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>       |          |                |           |                                 |
| S323     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ> | DECK C.B |                |           |                                 |
| S323     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>       | CN1      | 87-099-753-010 |           | CONN,11P 9604                   |
| S324     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ> | SFR1     | 87-024-581-010 |           | SFR,3.3K DIA 6H                 |
| S324     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>       | SOL1     | 82-ZM1-618-410 |           | SOL ASSY, 27                    |
| S325     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ> | SOL2     | 82-ZM1-618-410 |           | SOL ASSY, 27                    |
| S325     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>       | SW1      | 87-A90-673-010 |           | SW,MICRO ESE11SH1C              |
| S326     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ> | SW2      | 87-A91-500-010 |           | SW,MICRO MPU11470MLB0           |
| S326     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>       | SW3      | 87-A91-500-010 |           | SW,MICRO MPU11470MLB0           |
| S327     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ> | SW4      | 87-A91-500-010 |           | SW,MICRO MPU11470MLB0           |
| S327     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>       | SW5      | 87-A90-673-010 |           | SW,MICRO ESE11SH1C              |
| S328     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ> |          |                |           |                                 |
| S328     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>       |          |                |           |                                 |
| S329     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ> |          |                |           |                                 |
| S329     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>       |          |                |           |                                 |
| S330     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ> |          |                |           |                                 |
| S330     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>       |          |                |           |                                 |
| S331     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ> |          |                |           |                                 |
| S331     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>       |          |                |           |                                 |
| S332     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ> |          |                |           |                                 |
| S332     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>       |          |                |           |                                 |
| S333     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ> |          |                |           |                                 |
| S333     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>       |          |                |           |                                 |
| S334     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ> |          |                |           |                                 |
| S334     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>       |          |                |           |                                 |
| S341     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ> |          |                |           |                                 |
| S341     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>       |          |                |           |                                 |
| S342     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ> |          |                |           |                                 |
| S342     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>       |          |                |           |                                 |
| S343     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ> |          |                |           |                                 |
| S343     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>       |          |                |           |                                 |
| S344     | 87-A90-095-080 |           | SW, TACT EVQ11G04M<U,LH,300EZ> |          |                |           |                                 |
| S344     | 87-A90-164-080 |           | SW, TACT SKQNA(N)<305EZ>       |          |                |           |                                 |

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち

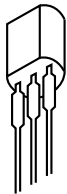
Chip Resistor Part Coding



チップ抵抗  
Chip resistor

| 容量<br>Wattage | 種類<br>Type | 許容誤差<br>Tolerance | 記号<br>Symbol | 寸法／Dimensions (mm) |     |      |      | 抵抗コード : A<br>Resistor Code : A |
|---------------|------------|-------------------|--------------|--------------------|-----|------|------|--------------------------------|
|               |            |                   |              | 外形／Form            | L   | W    | t    |                                |
| 1/16W         | 1005       | ± 5%              | CJ           |                    | 1.0 | 0.5  | 0.35 | 104                            |
| 1/16W         | 1608       | ± 5%              | CJ           |                    | 1.6 | 0.8  | 0.45 | 108                            |
| 1/10W         | 2125       | ± 5%              | CJ           |                    | 2   | 1.25 | 0.45 | 118                            |
| 1/8W          | 3216       | ± 5%              | CJ           |                    | 3.2 | 1.6  | 0.55 | 128                            |

TRANSISTOR ILLUSTRATION



E C B

CDA1585BC  
KTC3198GR



E C B

2SC5343G  
CC5551



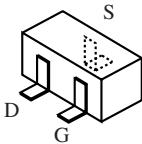
E B C

2SA1980G  
2SA1981Y

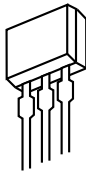


E C B

CSC4115BC

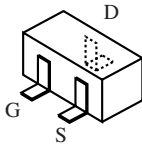


2SK360E

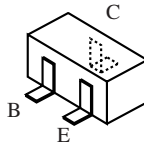


S D G

2SJ460  
2SK2541

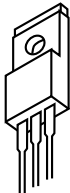


2SK2158



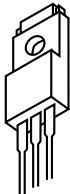
2SA1235F  
2SC2714(O)  
2SC3052F  
CMBT5401  
CMBT5551  
CSD1306E  
DTC114YK

DTC114YKA  
KRA102S  
KRC102S-RTK  
KRC104S  
KRA107S  
RT1P141C



B C E

2SB1686  
2SD2642



G D S

2SK2937

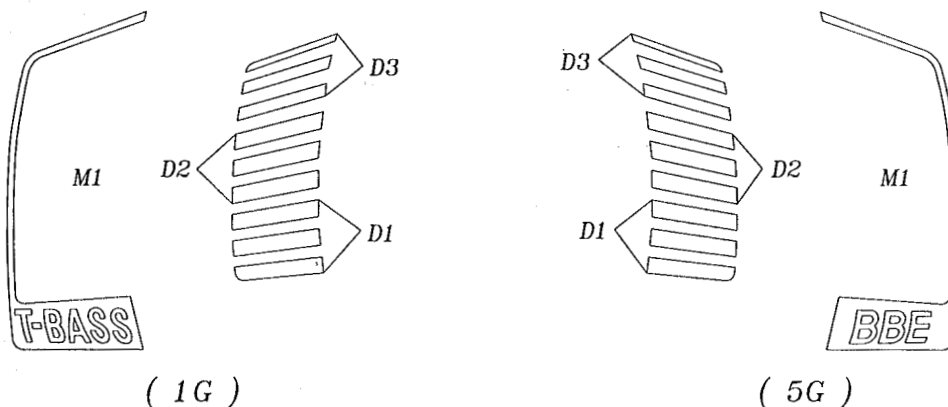
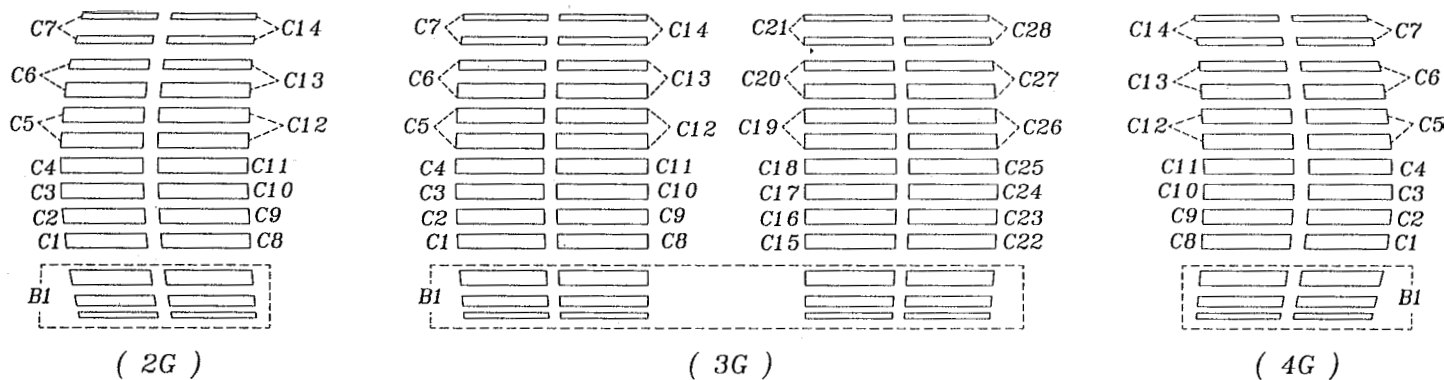
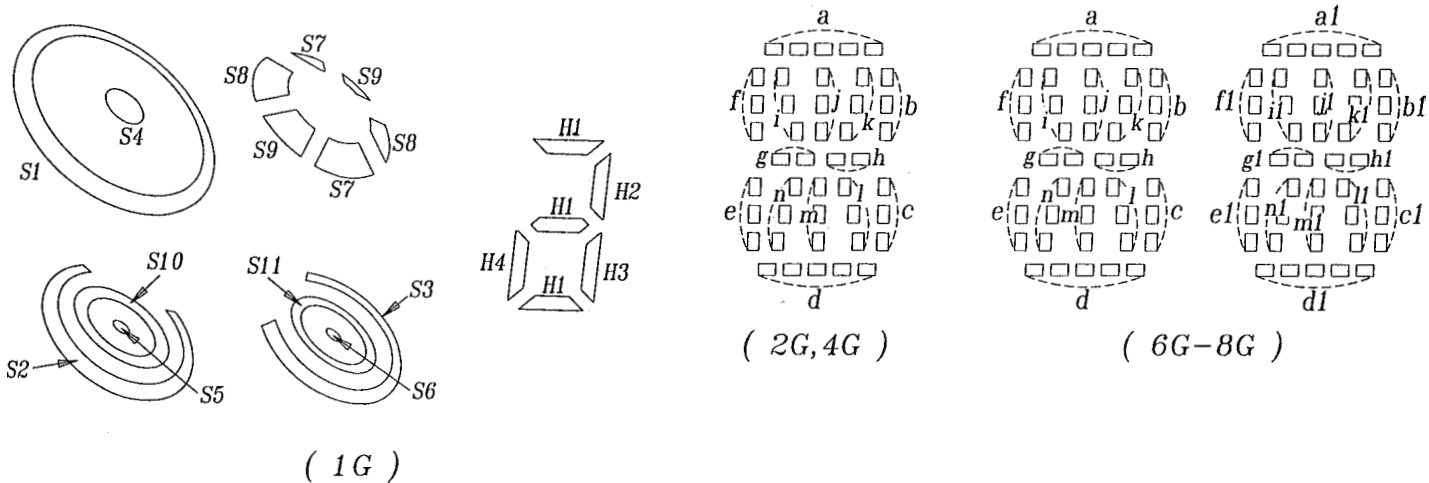
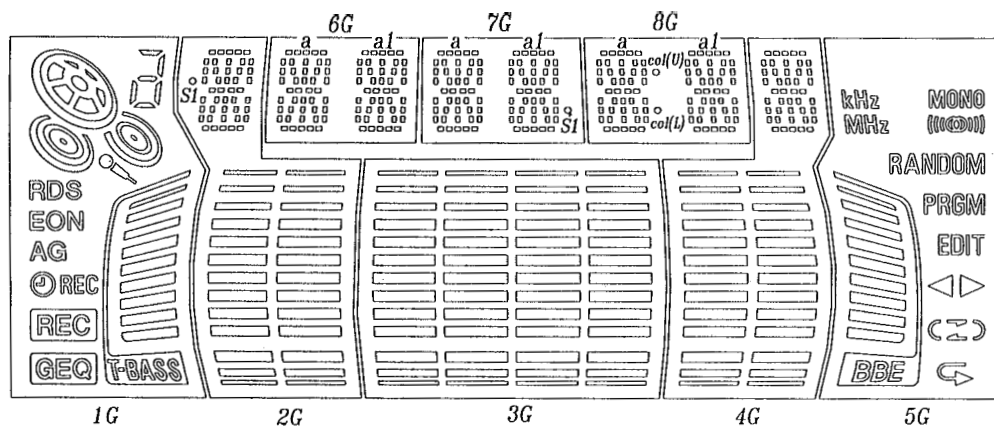


B C E

CSB1370EF

# FL (BJ814GNK) GRID ASSIGNMENT AND ANODE CONNECTION

## GRID ASSIGNMENT

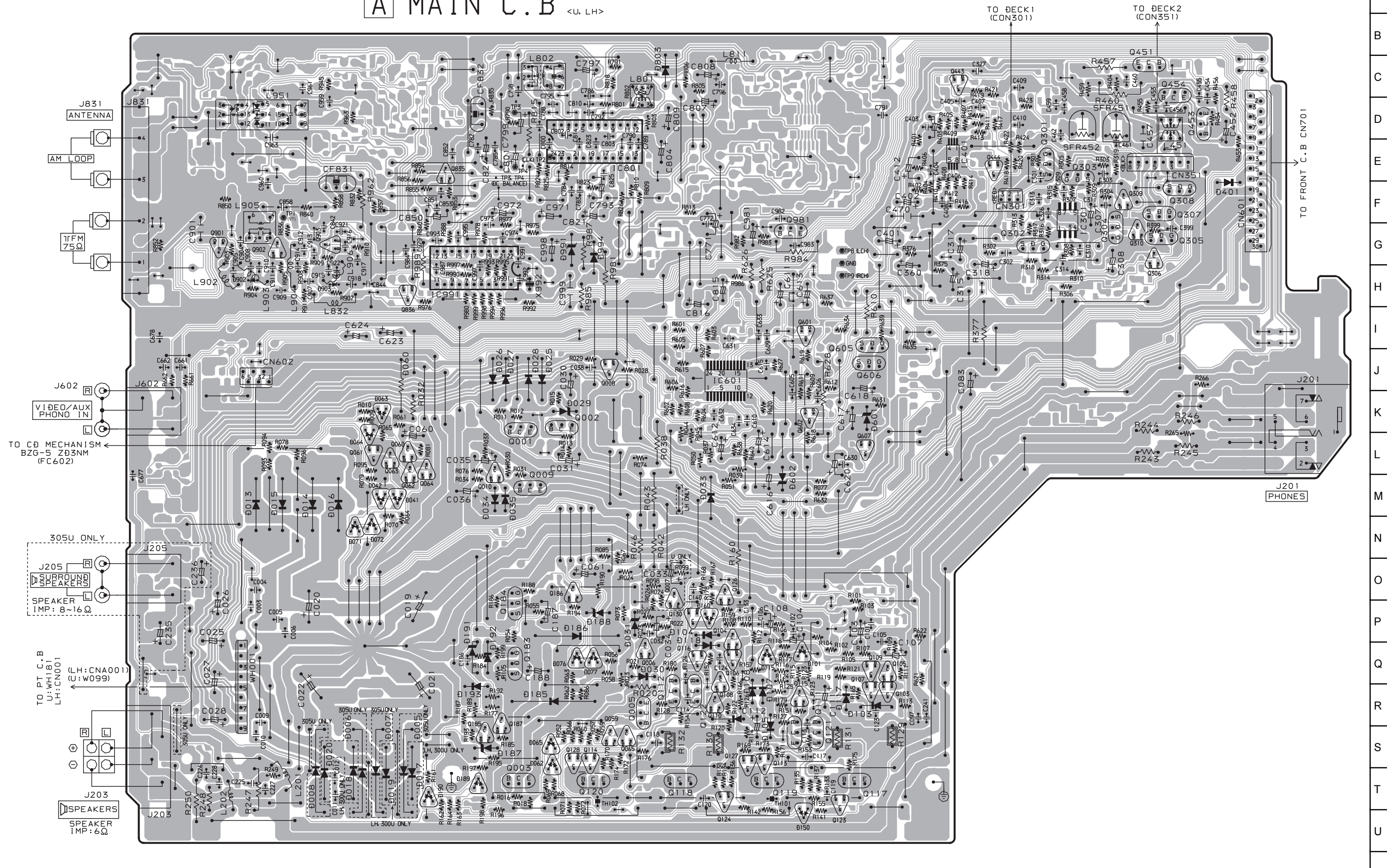


# ANODE CONNECTION

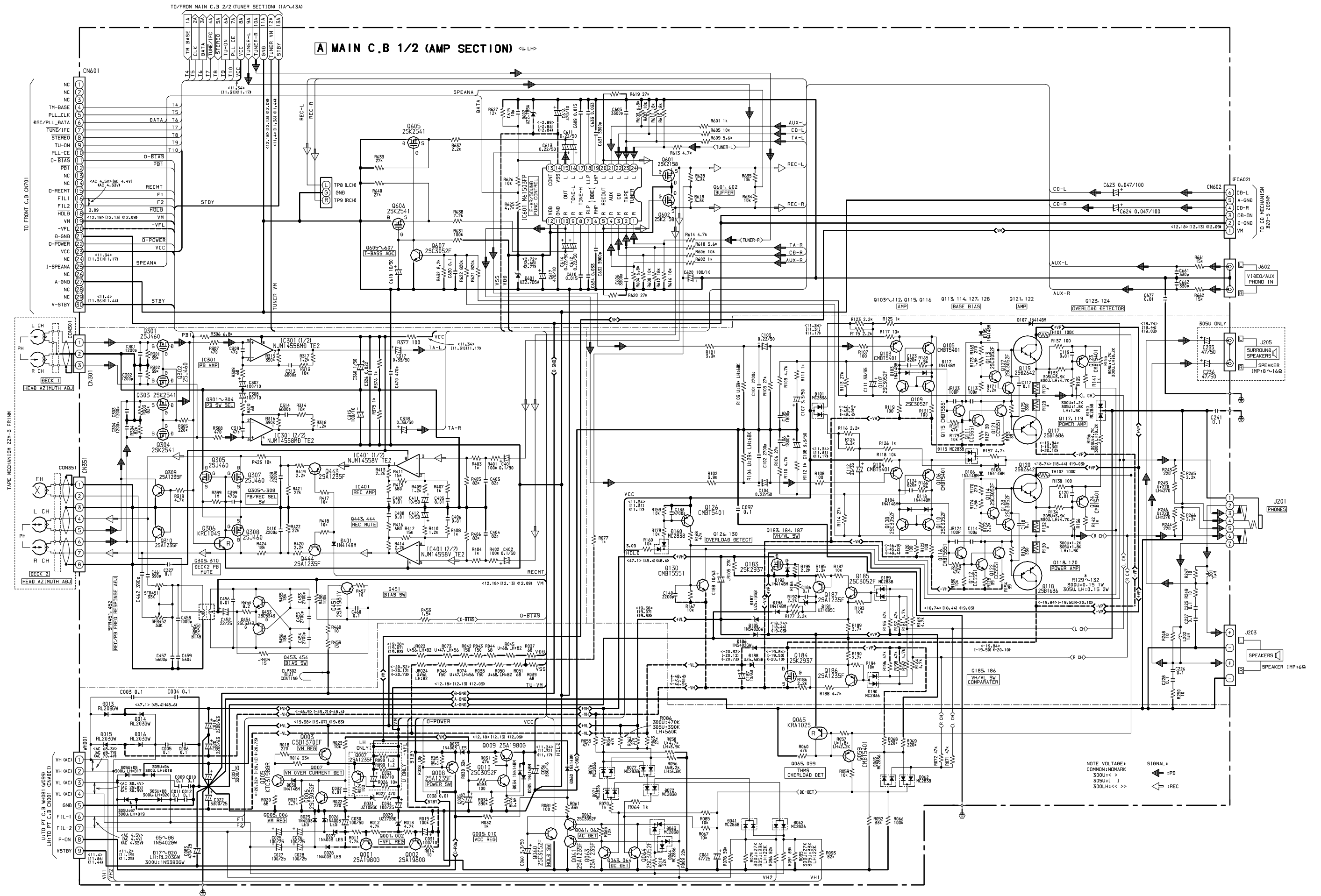
|     | 1G  | 2G  | 3G  | 4G  | 5G     | 6G | 7G | 8G |
|-----|-----|-----|-----|-----|--------|----|----|----|
| P1  |     | C1  | C1  | C1  | —      | a  | a  | a  |
| P2  | M1  | C2  | C2  | C2  | M1     | i  | i  | i  |
| P3  | D1  | C3  | C3  | C3  | D1     | j  | j  | j  |
| P4  | D2  | C4  | C4  | C4  | D2     | k  | k  | k  |
| P5  | D3  | C5  | C5  | C5  | D3     | b  | b  | b  |
| P6  | AG  | C6  | C6  | C6  |        | f  | f  | f  |
| P7  | EON | C7  | C7  | C7  |        | h  | h  | h  |
| P8  | RDS | C8  | C8  | C8  |        | g  | g  | g  |
| P9  |     | C9  | C9  | C9  |        | c  | c  | c  |
| P10 | REC | C10 | C10 | C10 |        | e  | e  | e  |
| P11 |     | C11 | C11 | C11 | —      | n  | n  | n  |
| P12 |     | C12 | C12 | C12 | EDIT   | m  | m  | m  |
| P13 | S1  | C13 | C13 | C13 | PRGM   | l  | l  | l  |
| P14 | S2  | C14 | C14 | C14 | RANDOM | d  | d  | d  |
| P15 | S3  | B1  | C15 | B1  | MONO   | a1 | a1 | a1 |

|     | 1G  | 2G | 3G  | 4G | 5G  | 6G | 7G | 8G     |
|-----|-----|----|-----|----|-----|----|----|--------|
| P16 | S4  | a  | C16 | a  |     | i1 | i1 | i1     |
| P17 | S5  | i  | C17 | i  | —   | j1 | j1 | j1     |
| P18 | S6  | j  | C18 | j  | MHz | k1 | k1 | k1     |
| P19 | S7  | k  | C19 | k  | kHz | b1 | b1 | b1     |
| P20 | S8  | b  | C20 | b  |     | f1 | f1 | f1     |
| P21 | S9  | f  | C21 | f  | —   | h1 | h1 | h1     |
| P22 | S10 | h  | C22 | h  | —   | g1 | g1 | g1     |
| P23 | S11 | g  | C23 | g  | —   | c1 | c1 | c1     |
| P24 | H1  | c  | C24 | c  | —   | e1 | e1 | e1     |
| P25 | H2  | e  | C25 | e  | —   | n1 | n1 | n1     |
| P26 | H3  | n  | C26 | n  | —   | m1 | m1 | m1     |
| P27 | H4  | m  | C27 | m  | —   | l1 | l1 | l1     |
| P28 | —   | l  | C28 | l  | —   | d1 | d1 | d1     |
| P29 | —   | d  | B1  | d  | —   | —  | S1 | col(U) |
| P30 | —   | S1 | —   | —  | —   | —  | —  | col(L) |

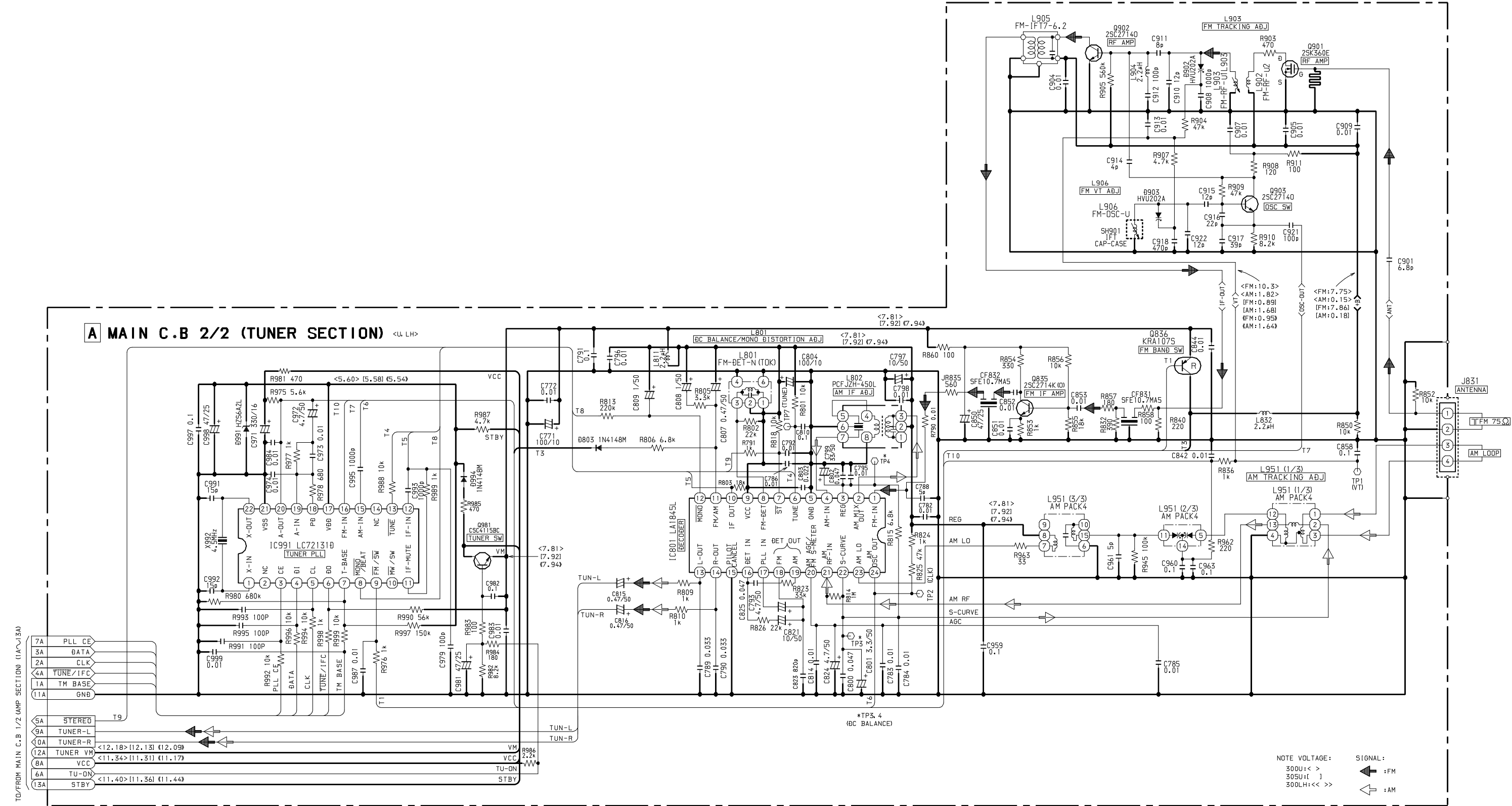
A MAIN C.B. <U, LH>



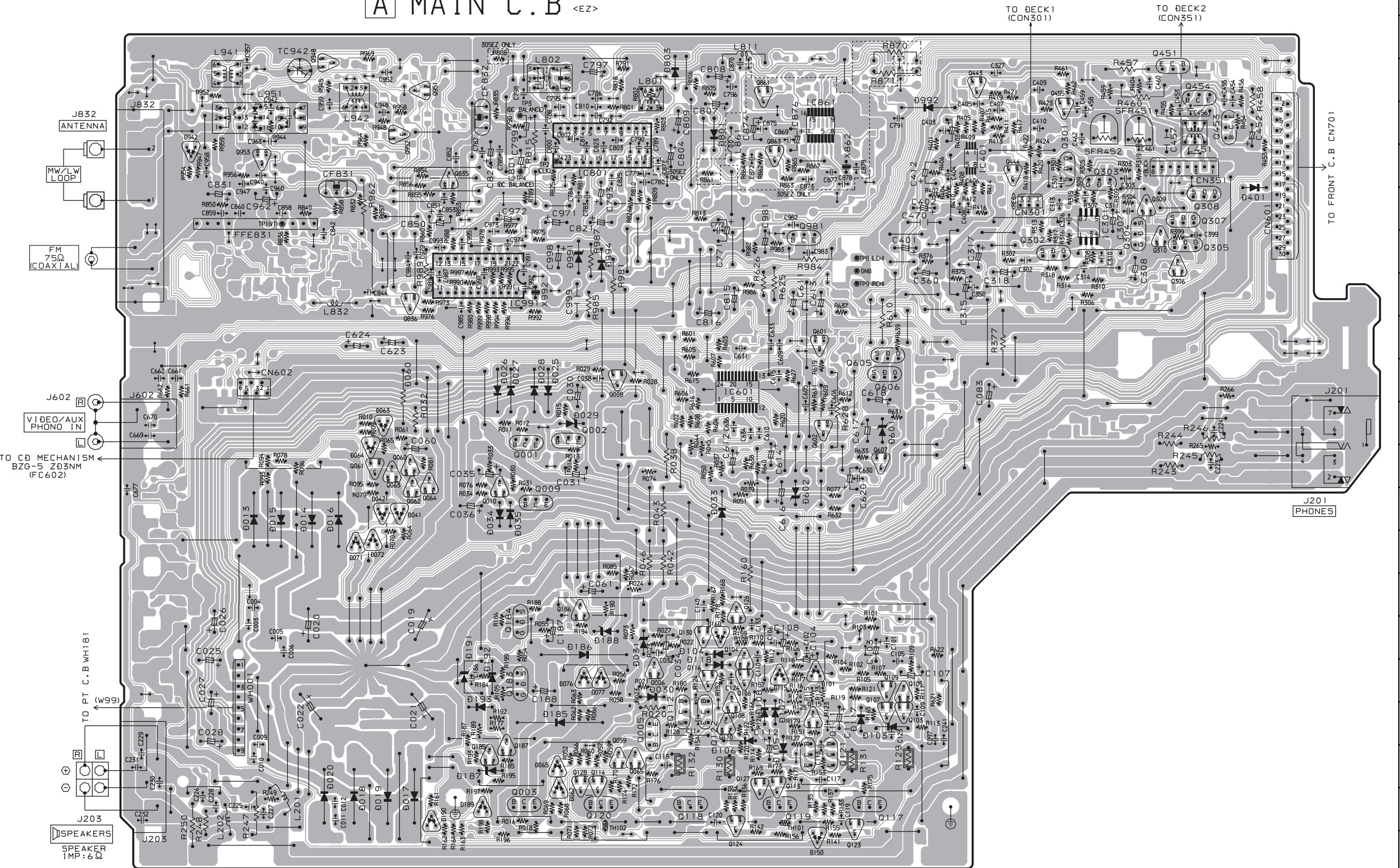
SCHEMATIC DIAGRAM – 1 (MAIN 1/2:AMP) <U,LH>



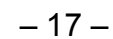
SCHEMATIC DIAGRAM – 2 (MAIN 2 / 2 : TUNER) <U, LH>



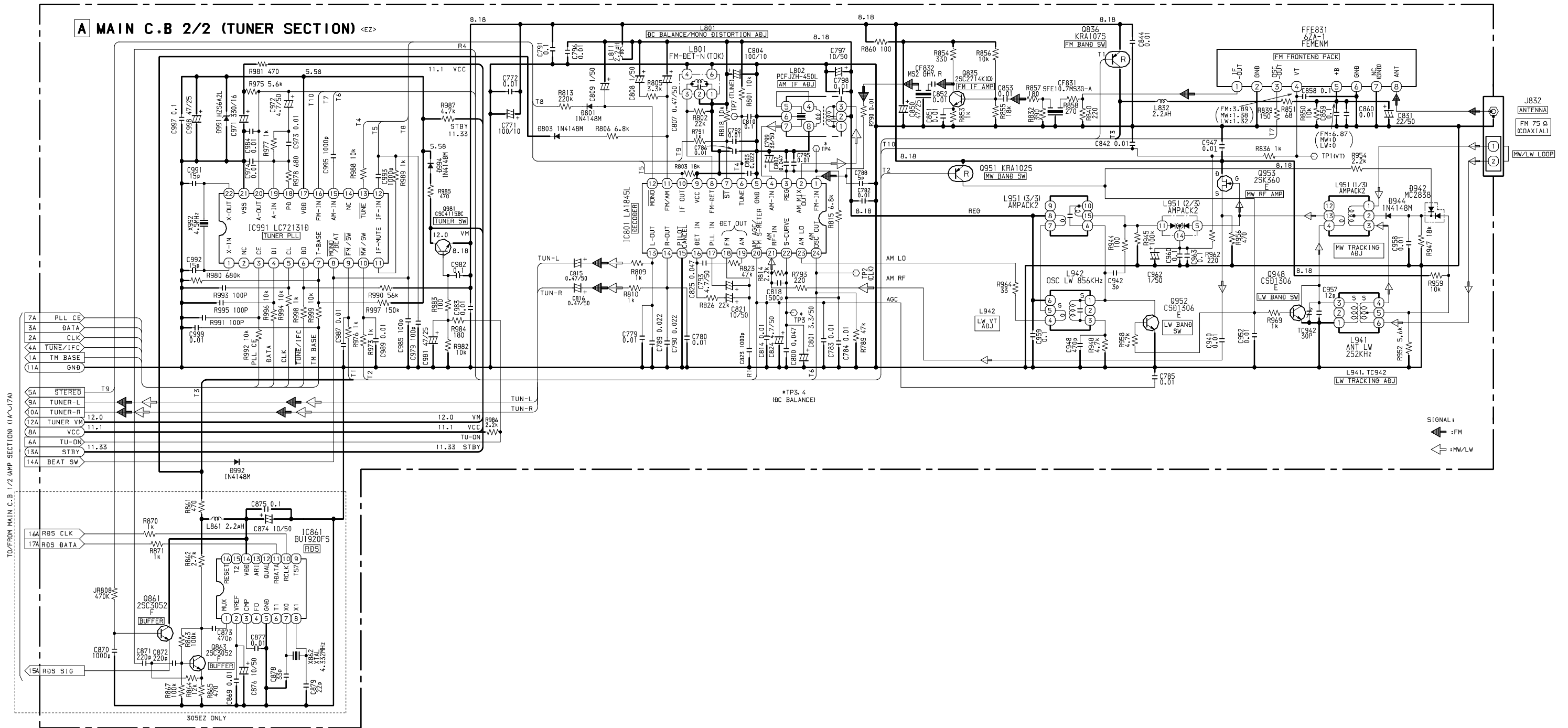
A MAIN C.B. <EZ>

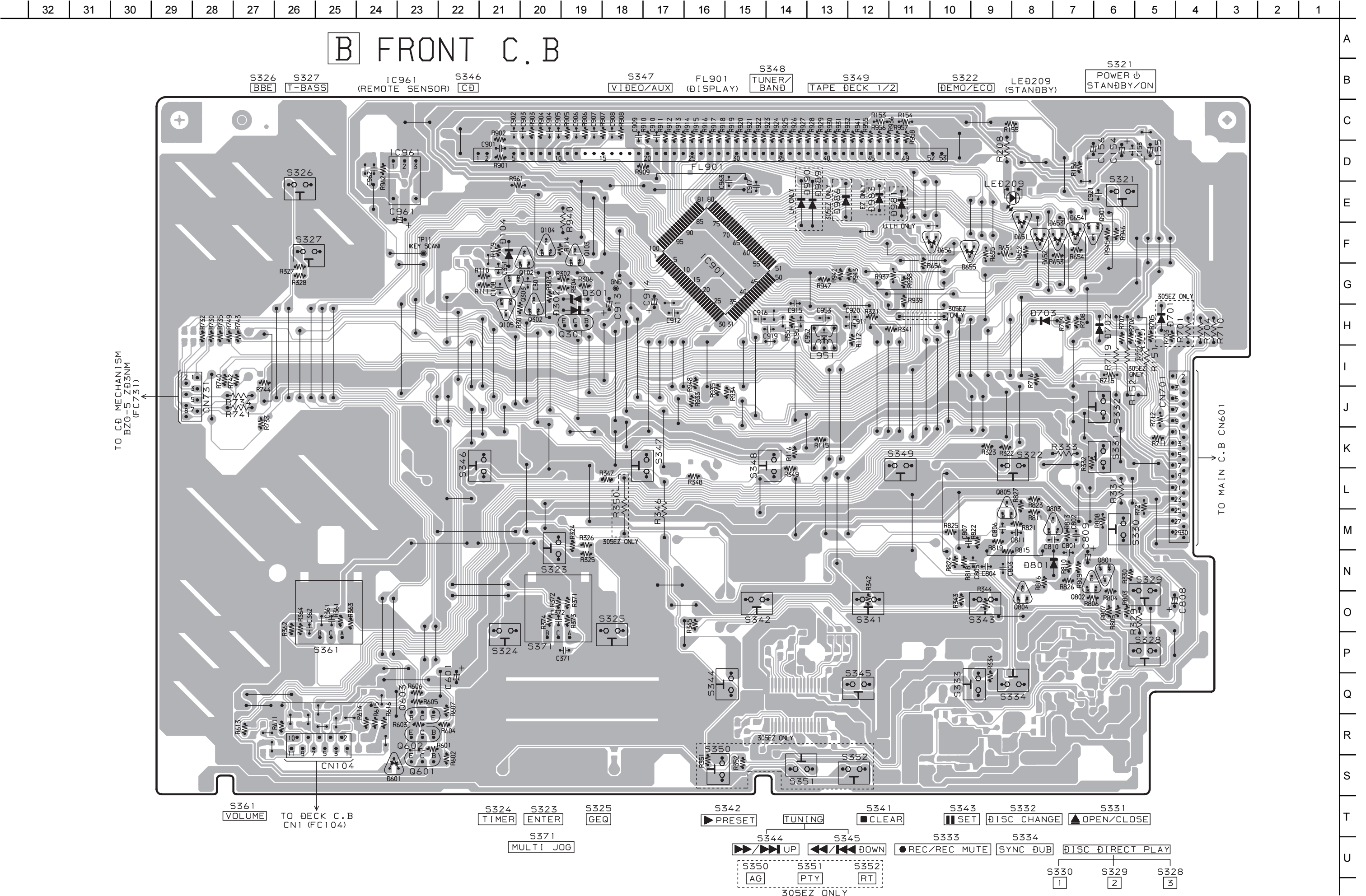


**A MAIN C.B 1/2 (AMP SECTION) <EZ>**

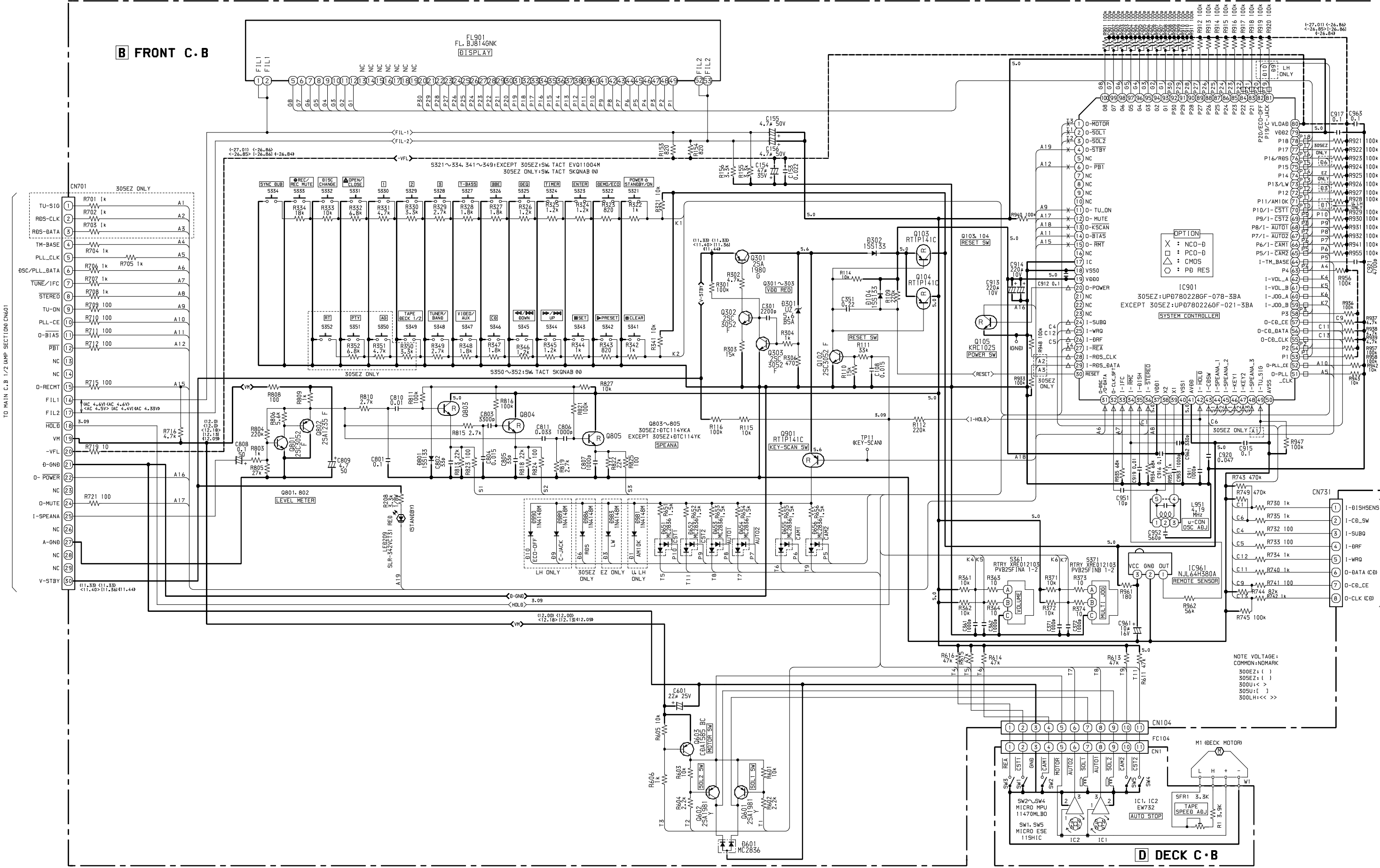


SCHEMATIC DIAGRAM-4 (MAIN 2/2:TUNER) <EZ>

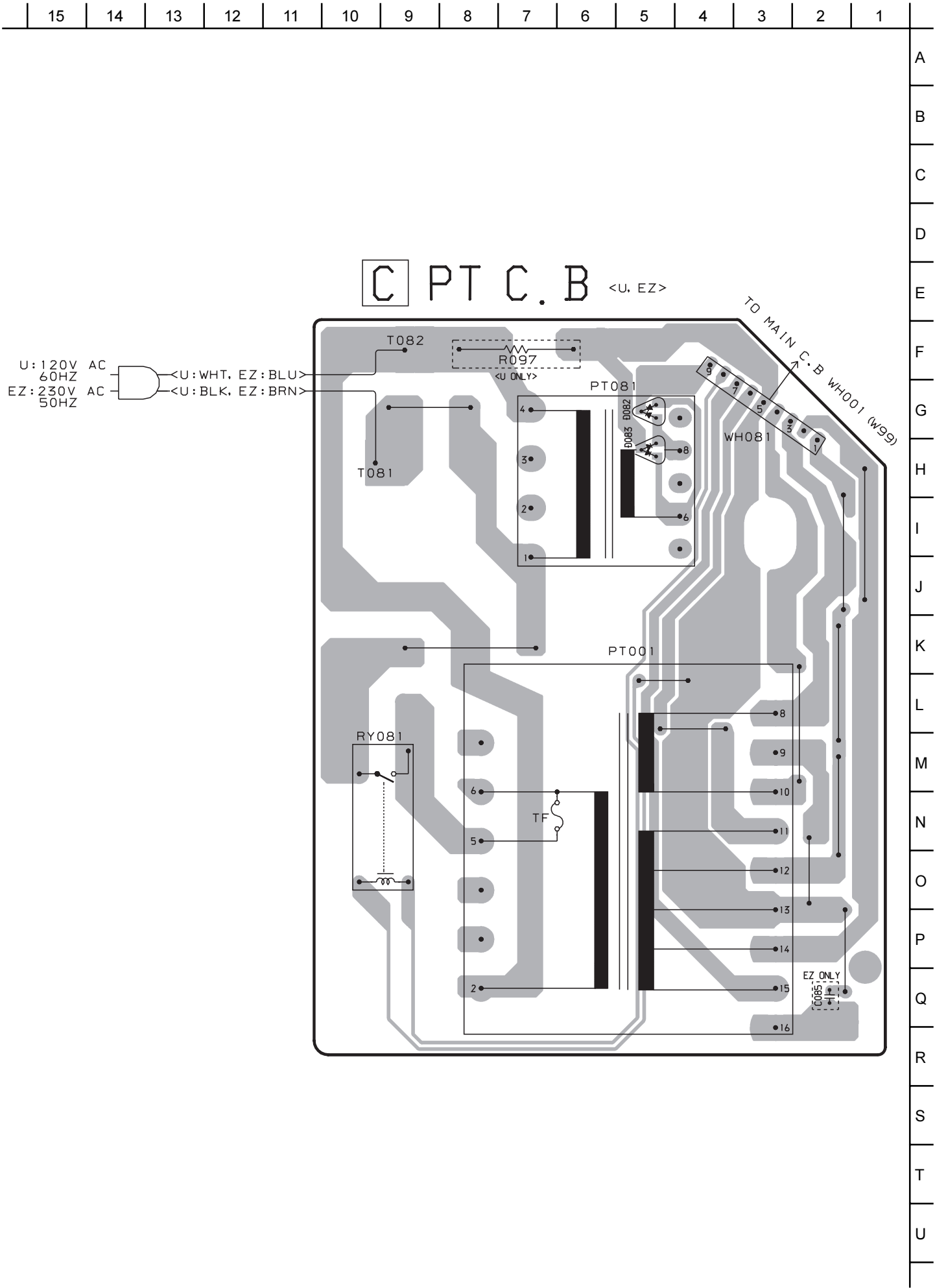




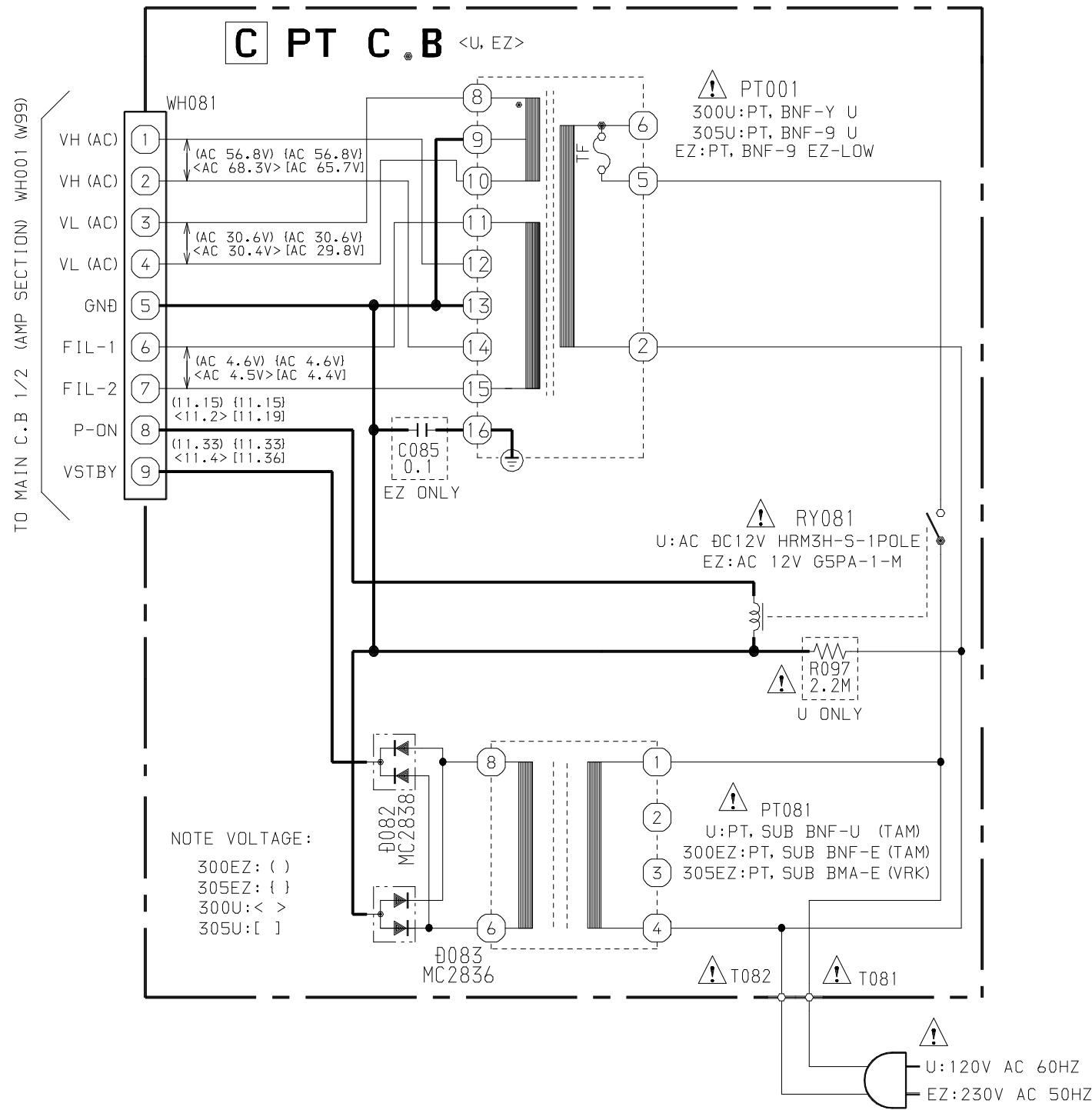
SCHEMATIC DIAGRAM – 5 (FRONT)



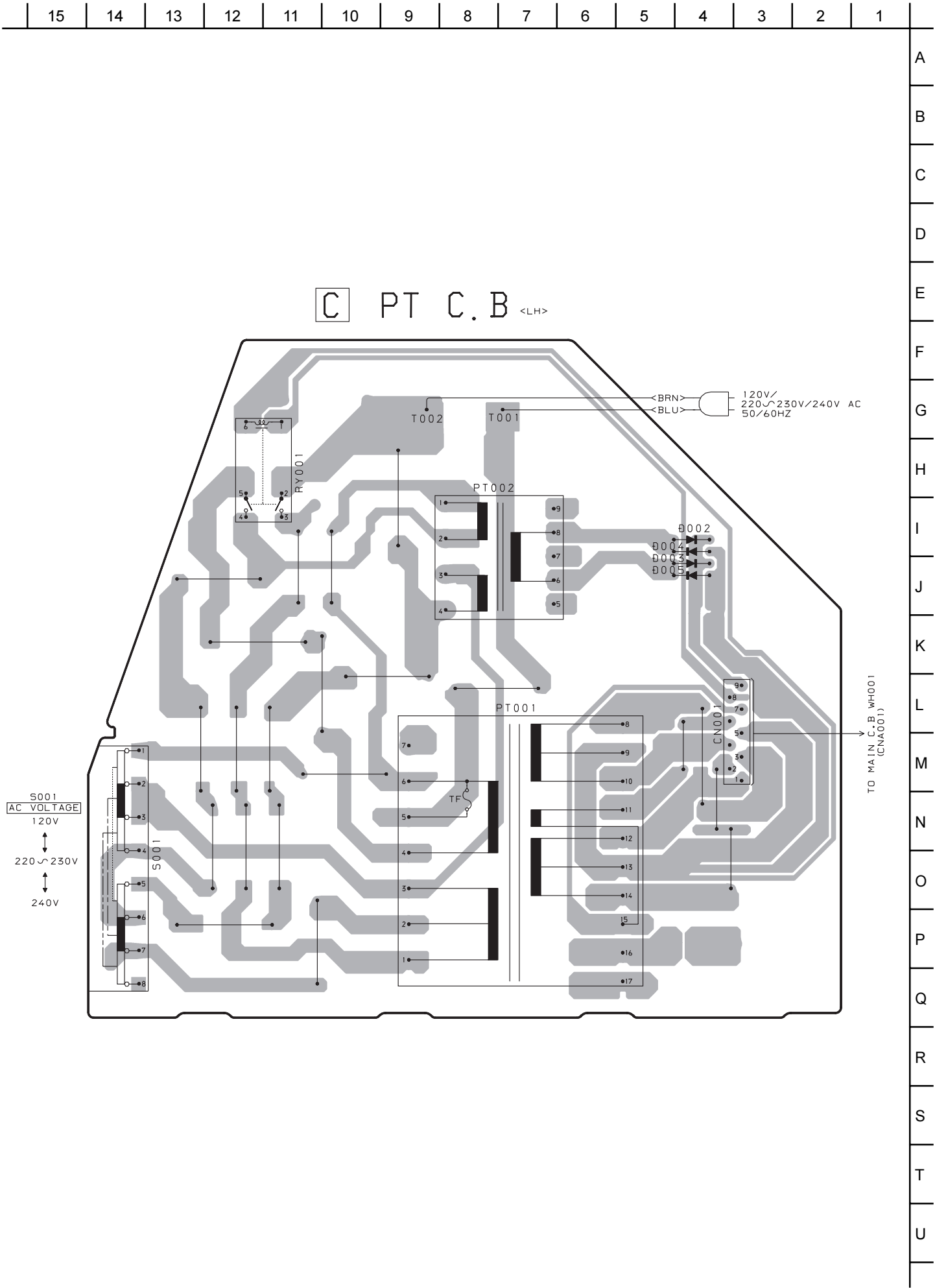
WIRING – 4 (PT) <U, EZ>



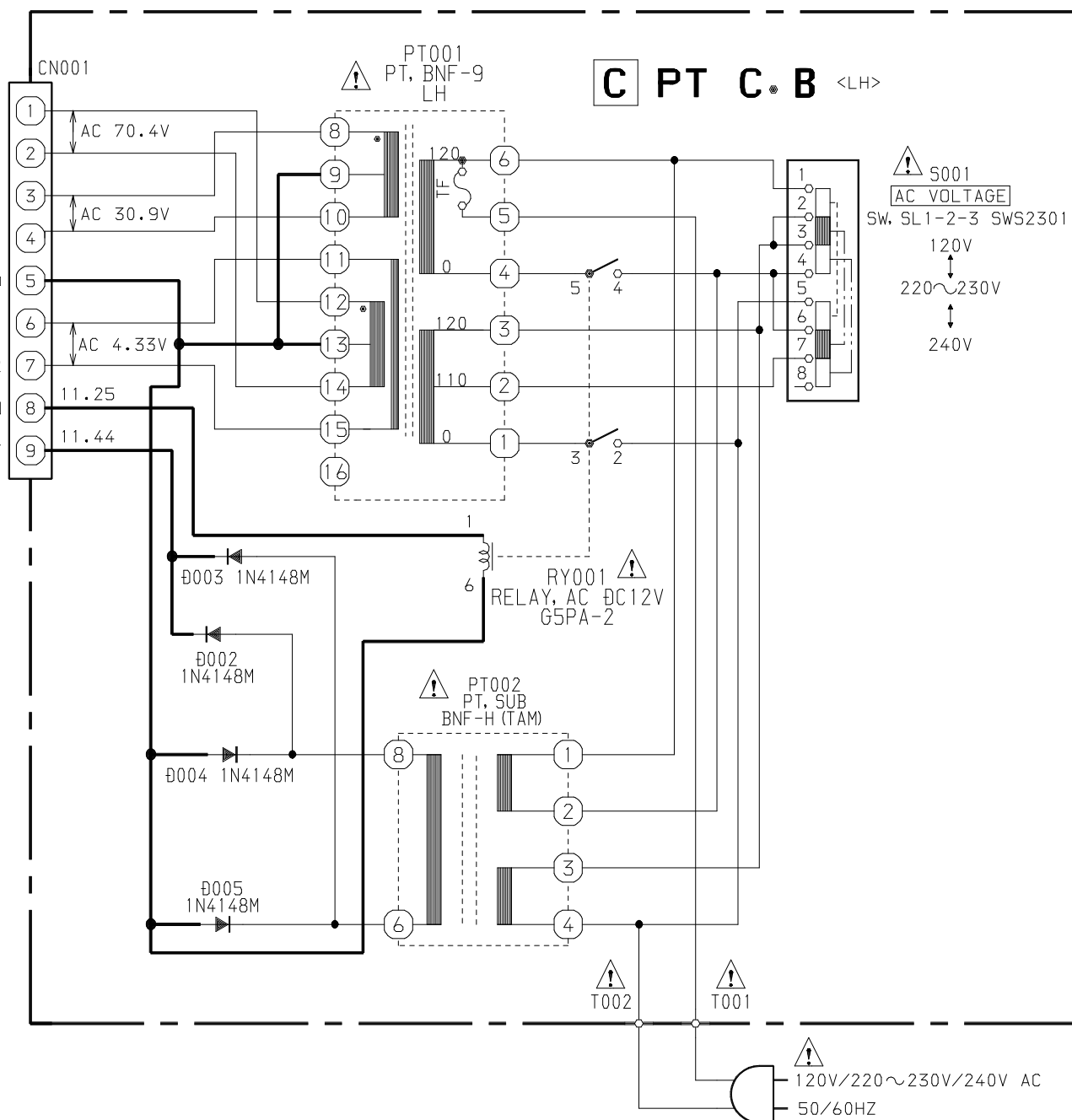
SCHEMATIC DIAGRAM – 6 (PT) <U,EZ>

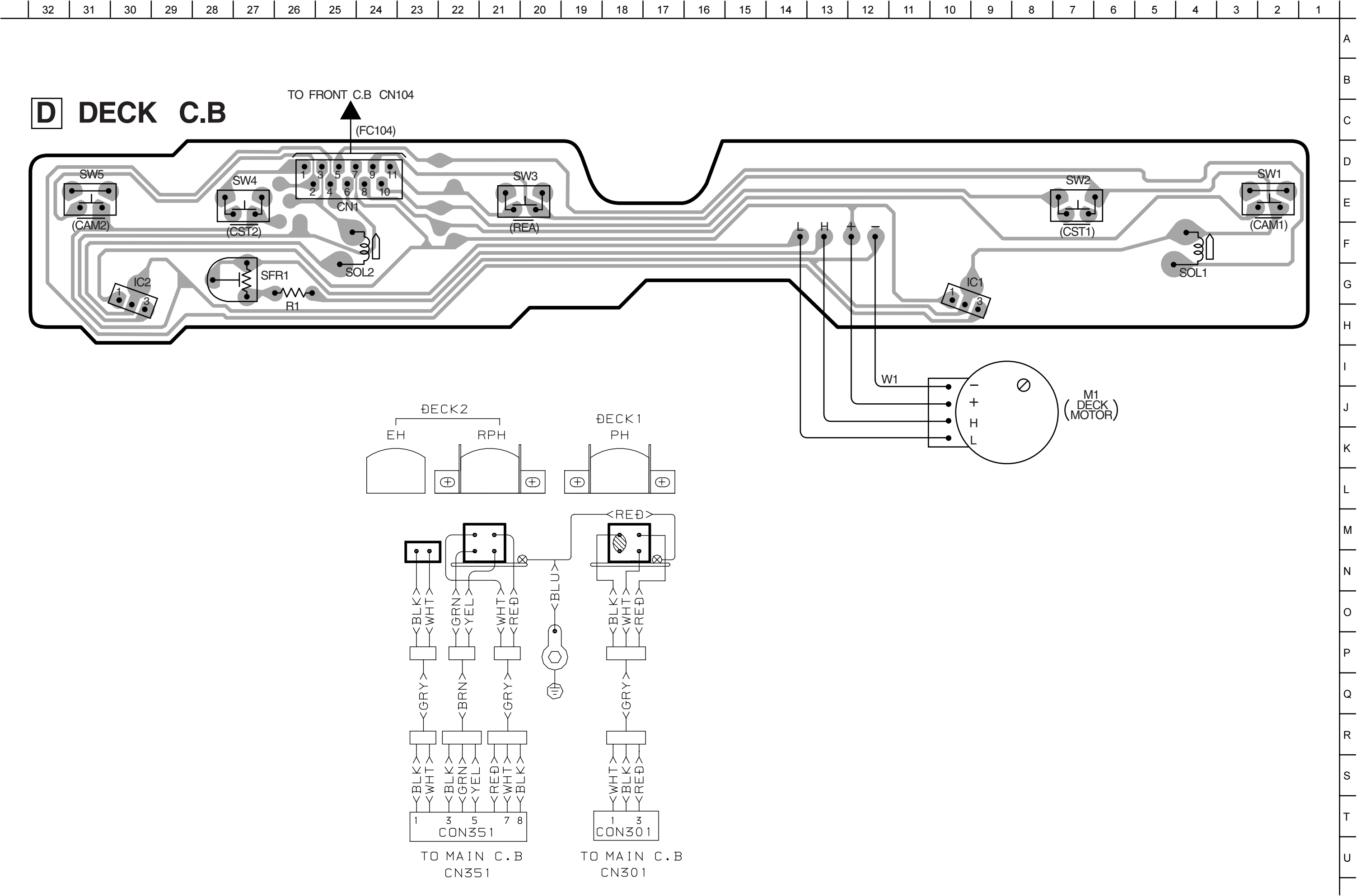


WIRING – 5 (PT) <LH>



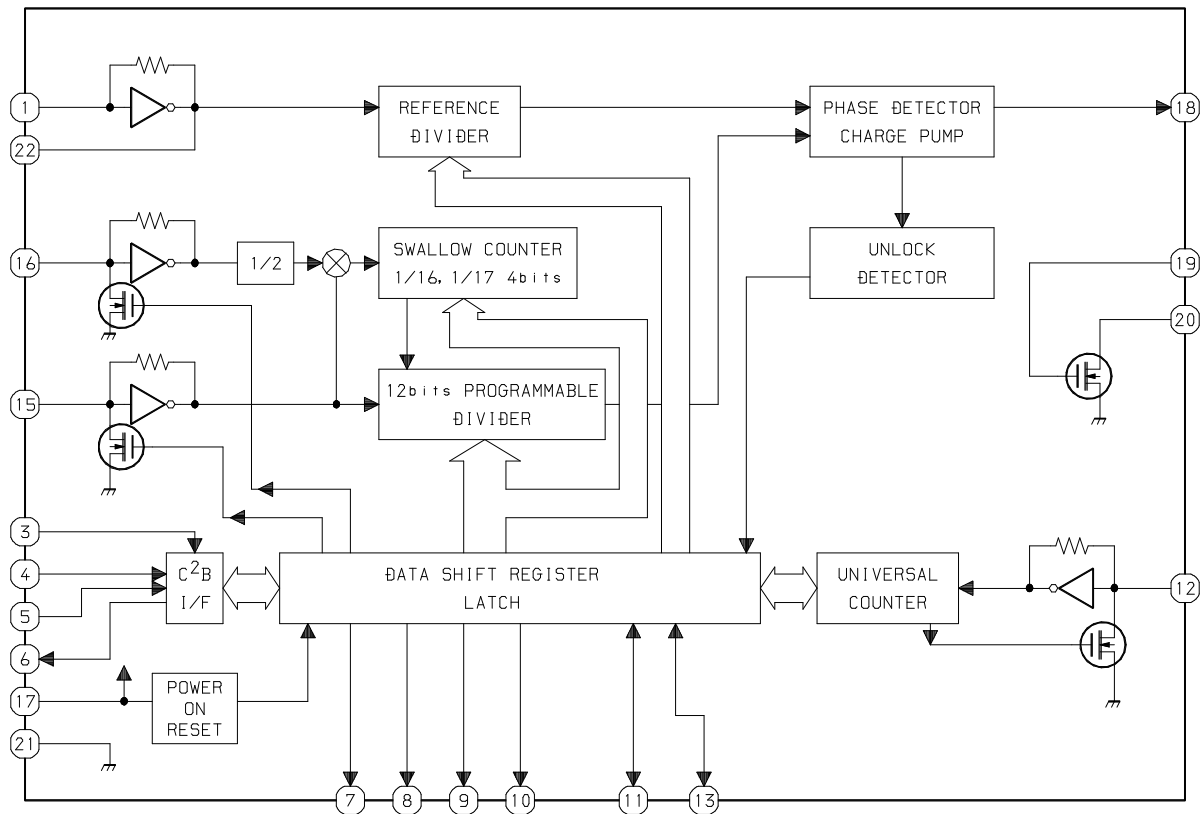
TO MAIN C.B 1 1/2 (AMP SECTION) WH001 (CNA001)



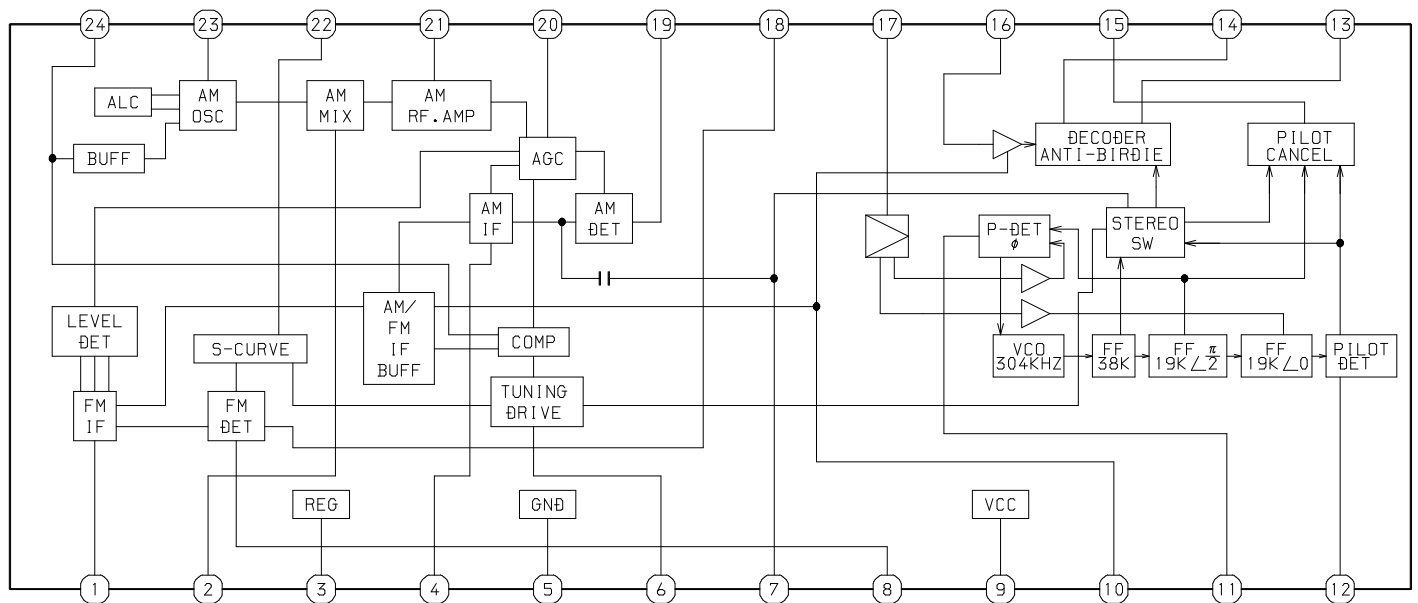


## IC BLOCK DIAGRAM

IC, LC72131D



IC, LA1845L



The diagram illustrates a stereo system architecture with 24 numbered connection points. The central component is a BBE (Binaural Beat Enhancement) block, which is split into two channels. Each channel features a TREBLE BOOST section with an op-amp and a BASS BOOST section with an op-amp. The system includes several control elements: a MONO SW (Mono Switch), a MUTE switch, and two VOL (Volume) potentiometers. Additionally, there are two ATT (Attenuation) potentiometers. A CONTROL LOGIC block is connected to the bottom right of the system. The diagram is numbered 1 through 24 for connection points.

The diagram illustrates the internal architecture of the 16C45 microcontroller, showing the PLL (57KHz RDS/ARI), PLL (1.1875KHz), BIPHASE DECODER, DIFFERENTIAL DECODER, and TEST block. It also shows the external components connected to the microcontroller pins, such as the ANTI-ALIASING FILTER, 8TH SWITCHED CAPACITOR FILTER, and COMPARATOR. The diagram is labeled with pin numbers 1 through 16.

## IC DESCRIPTION

IC,  $\mu$ PD780226GF-021-3BA<U,LH,300EZ>, IC,  $\mu$ PD780228GF-078-3BA<305EZ>

| Pin No. | Pin Name                  | I/O | Description                                                    |
|---------|---------------------------|-----|----------------------------------------------------------------|
| 1       | O-MOTOR                   | O   | DECK MOTOR $\overline{\text{ON}}$ /OFF output.                 |
| 2       | O-SOL1                    | O   | DECK1 solenoid $\overline{\text{ON}}$ /OFF output.             |
| 3       | O-SOL2                    | O   | DECK2 solenoid $\overline{\text{ON}}$ /OFF output.             |
| 4       | O-STBY                    | O   | STANDBY LED (Echo mode) output ( $\overline{\text{ON}}$ /OFF). |
| 5       | NC                        | –   | Not connected.                                                 |
| 6       | O-PB1                     | O   | DECK1 playback switch output ( $\overline{\text{ON}}$ /OFF).   |
| 7       | NC                        | –   | Not connected.                                                 |
| 8       | NC                        | –   | Not connected.                                                 |
| 9       | NC                        | –   | Not connected.                                                 |
| 10      | NC                        | –   | Not connected.                                                 |
| 11      | O-TU_ON                   | O   | TUNER ON/ $\overline{\text{OFF}}$ switch output.               |
| 12      | O-MUTE                    | O   | System MUTE ON/ $\overline{\text{OFF}}$ output.                |
| 13      | O-KSCAN                   | O   | Switch SCAN timing output.                                     |
| 14      | O-BIAS                    | O   | DECK2 BIAS $\overline{\text{ON}}$ /OFF output.                 |
| 15      | O-RMT                     | O   | DECK2 REC MUTE $\overline{\text{ON}}$ /OFF output.             |
| 16      | NC                        | –   | Not connected.                                                 |
| 17      | IC                        | –   | Internal connection (connected to GND).                        |
| 18      | VSSO                      | –   | GND.                                                           |
| 19      | VDDO                      | –   | Power supply.                                                  |
| 20      | O-POWER                   | O   | System power supply ON/ $\overline{\text{OFF}}$ output.        |
| 21      | NC                        | –   | Not connected.                                                 |
| 22      | NC                        | –   | Not connected.                                                 |
| 23      | NC                        | –   | Not connected.                                                 |
| 24      | I-SUBQ                    | I   | CD SUBQ data input.                                            |
| 25      | I-WRQ                     | I   | CD interrupt signal input.                                     |
| 26      | I-DRF                     | I   | CD focus ON detect data input.                                 |
| 27      | I-REA                     | I   | DECK2 sideA record OK switch data input.                       |
| 28      | I-RDS_CLK                 | I   | Tuner RDS clock input <305EZ only>.                            |
| 29      | I-RDS_DATA                | I   | Tuner RDS data input <305EZ only>.                             |
| 30      | $\overline{\text{RESET}}$ | –   | System reset input ( $\overline{\text{ON}}$ /OFF).             |
| 31      | O-DSC/O-DATA              | O   | Function IC/Tuner IC, DATA output.                             |
| 32      | O-CLK_SFT                 | O   | MICON clock shift output.                                      |
| 33      | I-IFC                     | I   | Tune IF count serial data input.                               |
| 34      | I-RMC                     | I   | System remote control signal input.                            |
| 35      | I-DISH                    | I   | CD turntable photo sensor input A/D converter input.           |
| 36      | I-STEREO                  | I   | Tuner STEREO detect input.                                     |
| 37      | VDD1                      | –   | Power supply.                                                  |
| 38      | X2                        | –   | 4.19MHz oscillator circuit.                                    |
| 39      | X1                        | –   | 4.19MHz oscillator circuit.                                    |
| 40      | VSS1                      | –   | GND.                                                           |
| 41      | AVDD                      | –   | Power supply.                                                  |
| 42      | I-HOLD                    | I   | Power failure detected input.                                  |
| 43      | I-CDSW                    | I   | CD mecha switch A/D converter input.                           |

| Pin No. | Pin Name    | I/O | Description                                                      |
|---------|-------------|-----|------------------------------------------------------------------|
| 44      | I-SPEANA_1  | I   | A/D input for spectrum analyser level display.                   |
| 45      | I-SPEANA_2  | I   | A/D input for spectrum analyser level display.                   |
| 46      | I-KEY1      | I   | Key A/D input 1.                                                 |
| 47      | I-KEY2      | I   | Key A/D input 2.                                                 |
| 48      | I-SPEANA_3  | I   | A/D input for spectrum analyser level display.                   |
| 49      | I-TU_SIG    | I   | Tuner signal input <305EZ only>.                                 |
| 50      | AVSS        | –   | GND.                                                             |
| 51      | O-PLL_CLK   | O   | PLL IC clock enable output.                                      |
| 52      | O-PLL_CE    | O   | PLL IC chip enable output.                                       |
| 53, 54  | P1, P2      | O   | FL segment P1, P2 output.                                        |
| 55      | O-CD_CLK    | O   | CD clock output.                                                 |
| 56      | O-CD_DATA   | O   | CD data output.                                                  |
| 57      | O-CD_CE     | O   | CD chip enable output.                                           |
| 58      | P3          | O   | FL segment P3 output.                                            |
| 59      | I-JOG_B     | I   | Dial jog rotary encoder input B.                                 |
| 60      | I-JOG_A     | I   | Dial jog rotary encoder input A.                                 |
| 61      | I-VOL_B     | I   | Volume rotary encoder input B.                                   |
| 62      | I-VOL_A     | I   | Volume rotary encoder input A.                                   |
| 63      | P4          | O   | FL segment P4 output.                                            |
| 64      | I-TM_BASE   | I   | Base input for clock.                                            |
| 65      | P5/I-CAM2   | O/I | FL segment P5 output / DECK2 CAM STOP switch data input.         |
| 66      | P6/I-CAM1   | O/I | FL segment P6 output / DECK1 CAM STOP switch data input.         |
| 67      | P7/I-AUTO2  | O/I | FL segment P7 output / DECK2 AUTO STOP switch data input.        |
| 68      | P8/I-AUTO1  | O/I | FL segment P8 output / DECK1 AUTO STOP switch data input.        |
| 69      | P9/I-CST2   | O/I | FL segment P9 output / DECK2 cassette detect switch data input.  |
| 70      | P10/I-CST1  | O/I | FL segment P10 output / DECK1 cassette detect switch data input. |
| 71      | P11/AM10K   | O/I | FL segment P11 output / AM10K input to diode <U,LH only>.        |
| 72      | P12         | O   | FL segment P12 output.                                           |
| 73      | P13/LW      | O/I | FL segment P13 output / LW input to diode <EZ only>.             |
| 74, 75  | P14, P15    | O   | FL segment P14, P15 output.                                      |
| 76      | P16/RDS     | O/I | FL segment P16 output / RDS input to diode <305EZ only>.         |
| 77, 78  | P17, P18    | O   | FL segment P17, P18 output.                                      |
| 79      | VDD2        | –   | Power supply.                                                    |
| 80      | VLOAD       | –   | Power supply for FL display.                                     |
| 81      | P19/C-JACK  | O/I | FL segment P19 output / C-JACK data input <LH only>.             |
| 82      | P20/ECO-OFF | O/I | FL segment P20 output / ECO-OFF data input <LH only>.            |
| 83 ~ 92 | P21 ~ P30   | O   | FL segment P21 ~ P30 output.                                     |
| 93 ~100 | G1 ~ G8     | O   | FL grid G1 ~ G8 output.                                          |

## ADJUSTMENT <TUNER / FRONT / DECK>

### < TUNER SECTION >

1. Clock Frequency Check  
Settings : • Test point : TP2 (CLK)  
Method : Set to AM 1710kHz(U,LH), MW 1602kHz(EZ) and check that the test point is 2160kHz  $\pm$  45Hz(U,LH), 2052kHz  $\pm$  45Hz(EZ).
2. AM(MW) VT Check  
Settings : • Test point : TP1 (VT)  
Method : Set to AM 1710kHz(U,LH), MW 1602kHz(EZ) and check that the test point is less than 8.5V(U,LH), less than 8.0V(EZ).  
Then set to AM 530kHz(U,LH), MW 531kHz (EZ) and check that the test point is more than 0.6V.
3. LW VT Adjustment <EZ>  
Settings : • Test point : TP1 (VT)  
• Adjustment location : L942  
Method : Set to LW 144kHz and adjust L942 so that the test point becomes 1.3V  $\pm$  0.05V. Then set to LW 290kHz and check that the test point is less than 8.0V.
4. FM VT Adjust <U,LH>  
Settings : • Test point : TP1 (VT)  
• Adjustment location : L906  
Method : Set to FM 87.5MHz, 108.0MHz and adjust L906 so that the test point becomes more than 0.4V (87.5MHz) and equals to 7.0V  $\pm$  0.1V (108.0MHz).
5. FM VT Check <EZ>  
Settings : • Test point : TP1 (VT)  
Method : Set to FM 87.5MHz, 108.0MHz and check that the test point is more than 0.5V (87.5MHz) and less than 8.0V (108.0MHz).
6. AM(MW) Tracking Adjustment  
Settings : • Test point : TP8(Lch), TP9(Rch)  
• Adjustment location : L951(1/3)  
Method : Set to AM 1000kHz(U,LH), MW 999kHz(EZ) and adjust L951(1/3) to MAX.
7. LW Tracking Adjustment <EZ>  
Settings : • Test point : TP8(Lch), TP9(Rch)  
• Adjustment location :  
L941 .....144kHz  
TC942 .....290kHz  
Method : Set up TC942 to center before adjustment.  
Adjust L941 so that the level at 144kHz becomes maximum. Then adjust TC942 so that the level at 290kHz becomes maximum.
8. FM Tracking Adjustment <U,LH>  
Settings : • Test point : TP8(Lch), TP9(Rch)  
• Adjustment location : L903  
Method : Set to FM 87.5MHz and adjust L903 so that the test point becomes maximum.
9. FM Tracking Check <EZ>  
Settings : • Test point : TP8(Lch), TP9(Rch)  
Method : Set to FM 98.0MHz and check that the test point is less than 13dB $\mu$ V.
10. AM IF Adjustment  
Settings : • Test point : TP8(Lch), TP9(Rch)  
• Adjustment location :  
L802 .....450kHz.
11. DC Balance / Mono Distortion Adjustment  
Settings : • Test point : TP3, TP4 (DC Balance)  
TP8(Lch), TP9(Rch) (Distortion)  
• Adjustment location : L801  
• Input level : 60dB $\mu$ V  
Method : Set to FM 98.0MHz and adjust L801 so that the voltage between TP3 and TP4 becomes 0V  $\pm$  500mV.  
Next, check that the distortion is less than 1.2%.

### < FRONT SECTION >

12.  $\mu$ -CON OSC Adjustment  
Settings : • Test point : TP11 (KEY-SCAN), (GND)  
• Adjustment location : L951  
Method : Connect a frequency counter across TP11 (KEY-SCAN) and GND. Insert AC plug while pressing POWER key and TUNER function key. Then adjust L951 so that the test point becomes 112.88Hz  $\pm$  0.11Hz.  
To manual reset press POWER key while pressing CLEAR key.

< DECK SECTION >

13. Tape Speed Adjustment (DECK 2)

- Settings : • Test tape : TTA-100  
• Test point : TP8(Lch), TP9(Rch)  
• Adjustment location : SFR1

Method : Play back the test tape and adjust SFR1 so that the frequency counter reads  $3000\text{Hz} \pm 5\text{Hz}$ .

14. Head Azimuth Adjustment (DECK 1, DECK 2)

- Settings : • Test tape : TTA-330  
• Test point : TP8(Lch), TP9(Rch)  
• Adjustment location : Azimuth adjustment screw

Method : Play back (FWD) the 8kHz signal of the test tape and adjust screw so that the output becomes maximum.  
Next, perform on REV PLAY mode.

15. PB Frequency Response Check (DECK 1, DECK 2)

- Settings : • Test tape : TTA-330  
• Test point : TP8(Lch), TP9(Rch)

Method : Play back the 315Hz and 8kHz signals of the test tape and check that the output ratio of the 8kHz signal with respect to that of the 315Hz signal is within 5.0dB.

16. PB Sensitivity Check (DECK 1, DECK 2)

- Settings : • Test tape : TTA-200  
• Test point : TP8(Lch), TP9(Rch)

Method : Play back the test tape and check that the output level of the test point is  $110\text{mV} \pm 3.0\text{dB}$ .

17. REC/PB Frequency Response Adjustment (DECK 2)

- Settings : • Test tape : TTA-602  
• Test point : TP8(Lch), TP9(Rch)  
• Input signal : 1kHz / 8kHz (LINE IN)  
• Adjustment location : SFR451 (Lch)  
SFR452 (Rch)

Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP8, TP9 becomes -20VU (10mV). Record and play back the 1kHz and 10kHz signals and adjust SFRs so that the output of the 10kHz signals becomes  $0\text{B} \pm 1\text{dB}$  with respect to that of the 1kHz signal.

18. REC/PB Sensitivity Check (DECK 2)

- Settings : • Test tape : TTA-602  
• Test point : TP8(Lch), TP9(Rch)  
• Input signal : 1kHz (LINE IN)

Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at TP8, TP9 becomes 0VU (100mV). Record and play back the 1kHz signal and check that the output is  $-1\text{dB} \pm 3.5\text{dB}$ .

## CD TEST MODE

### 1. How to Start the CD Test Mode

While pressing the FUNCTION button, insert the AC plug to the power outlet.  
When the test mode is started, the message [CD TEST] is displayed.

### 2. How to Exit the CD Test Mode

Press the POWER button or disconnect the AC plug.

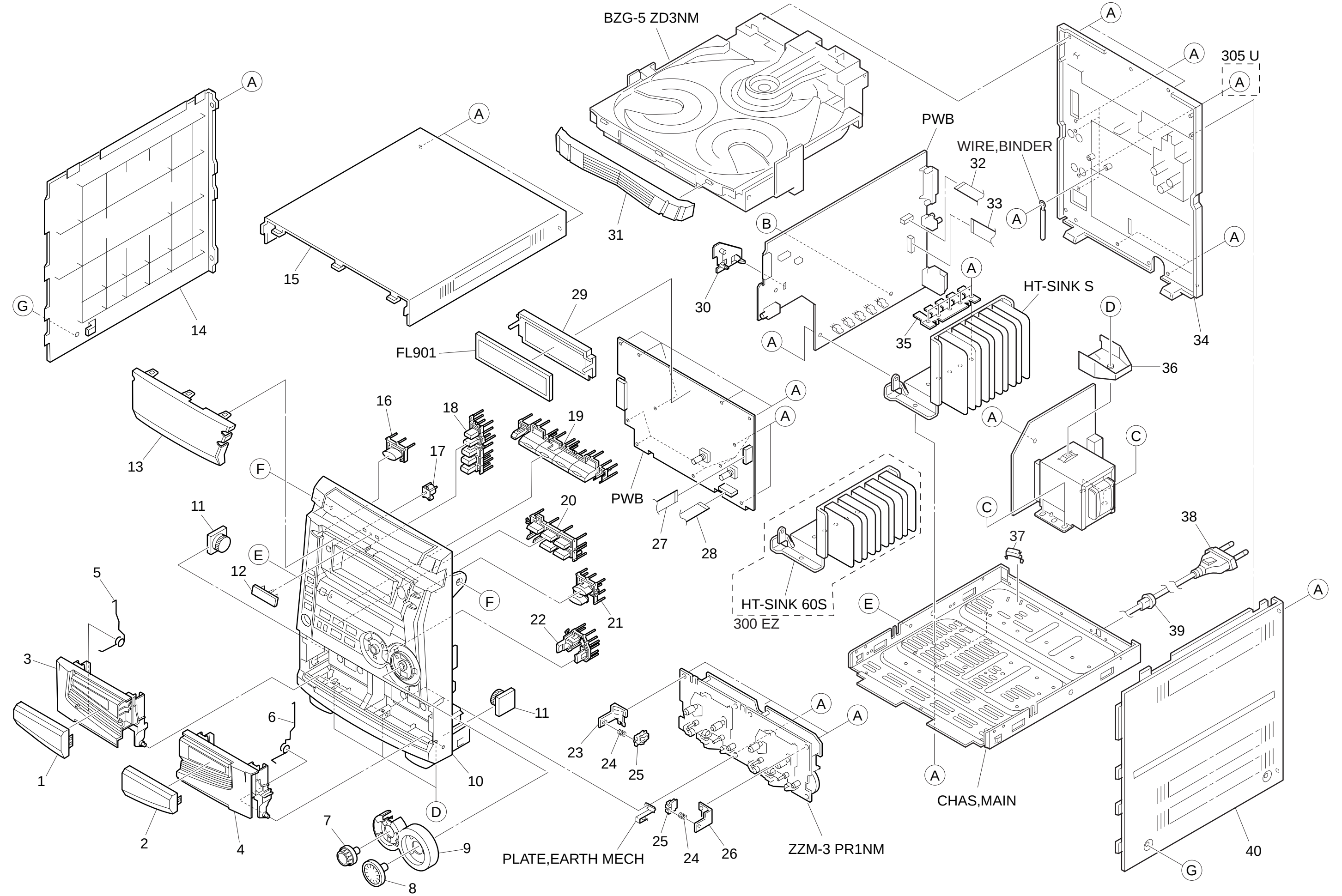
\* When any key other than PLAY is pressed during play mode, the machine exits the test mode.

### 3. Function Descriptions and Application of the CD Test Mode

| No | Mode          | Operation           | Display              | Function                                                                                                                                                                                            | Checking item                                                                                                                                                                                                          |
|----|---------------|---------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Start mode    |                     | All indicators light | <ul style="list-style-type: none"><li>• All FL indicators light</li></ul>                                                                                                                           | <ul style="list-style-type: none"><li>• FL check</li><li>• Microprocessor check</li></ul>                                                                                                                              |
| 2  | Search mode   | STOP button         | READING              | <ul style="list-style-type: none"><li>• LD illuminates all the time</li><li>• Focus search continuous operations *1</li><li>• Spindle motor continuous kick</li></ul>                               | <ul style="list-style-type: none"><li>• APC circuit check</li><li>• Laser current measurement</li><li>• Focus search waveform check</li><li>• Focus error waveform check (DRF in the search mode is ignored)</li></ul> |
| 3  | Play mode     | RESET button        | Normal               | <ul style="list-style-type: none"><li>• Normal playback</li><li>• If TOC cannot be read, focus search is continued</li></ul>                                                                        | <ul style="list-style-type: none"><li>• Each servo circuit is checked</li><li>• DRF check</li></ul>                                                                                                                    |
| 4  | Traverse mode | PAUSE button        | Normal               | <ul style="list-style-type: none"><li>• Tracking servo OFF/ON</li><li>• Each time PAUSE button is pressed, the tracking servo repeats turning OFF/ON</li></ul>                                      | <ul style="list-style-type: none"><li>• Tracking balance check</li></ul>                                                                                                                                               |
| 5  | Sled mode     | UP button           | CD TEST              | <ul style="list-style-type: none"><li>• Pickup moves to the inner circumference *2</li><li>At the same time, lens kicks to the inner circumference</li></ul>                                        | <ul style="list-style-type: none"><li>• Sled circuit check</li><li>• Tracking circuit check</li><li>• Mechanism operation check</li><li>• Pickup check</li></ul>                                                       |
|    |               | DOWN button         | CD TEST              | <ul style="list-style-type: none"><li>• Pickup moves to the outer circumference *2</li><li>At the same time, lens kicks to the outer circumference</li></ul>                                        |                                                                                                                                                                                                                        |
| 6  | Spindle mode  | REC/REC MUTE button | All indicators light | <ul style="list-style-type: none"><li>• The spindle motor rotates forward (rough speed) by pressing the button and rotates backward by pressing one more time and stops by pressing again</li></ul> | <ul style="list-style-type: none"><li>• Spindle circuit</li><li>• Spindle motor</li></ul>                                                                                                                              |

\*1: The driver IC heats up and the protection circuit starts working when the focus search is continued for 10 minutes or longer. There can be a case that operations cannot be performed correctly.  
In such a case, turn off the main power. After cooling down the machine, restart the machine.

\*2: Be careful not to damage the gear because the sled motor rotates while the UP or DOWN button is being pressed even if the pick-up is located in the innermost track or the outermost track.

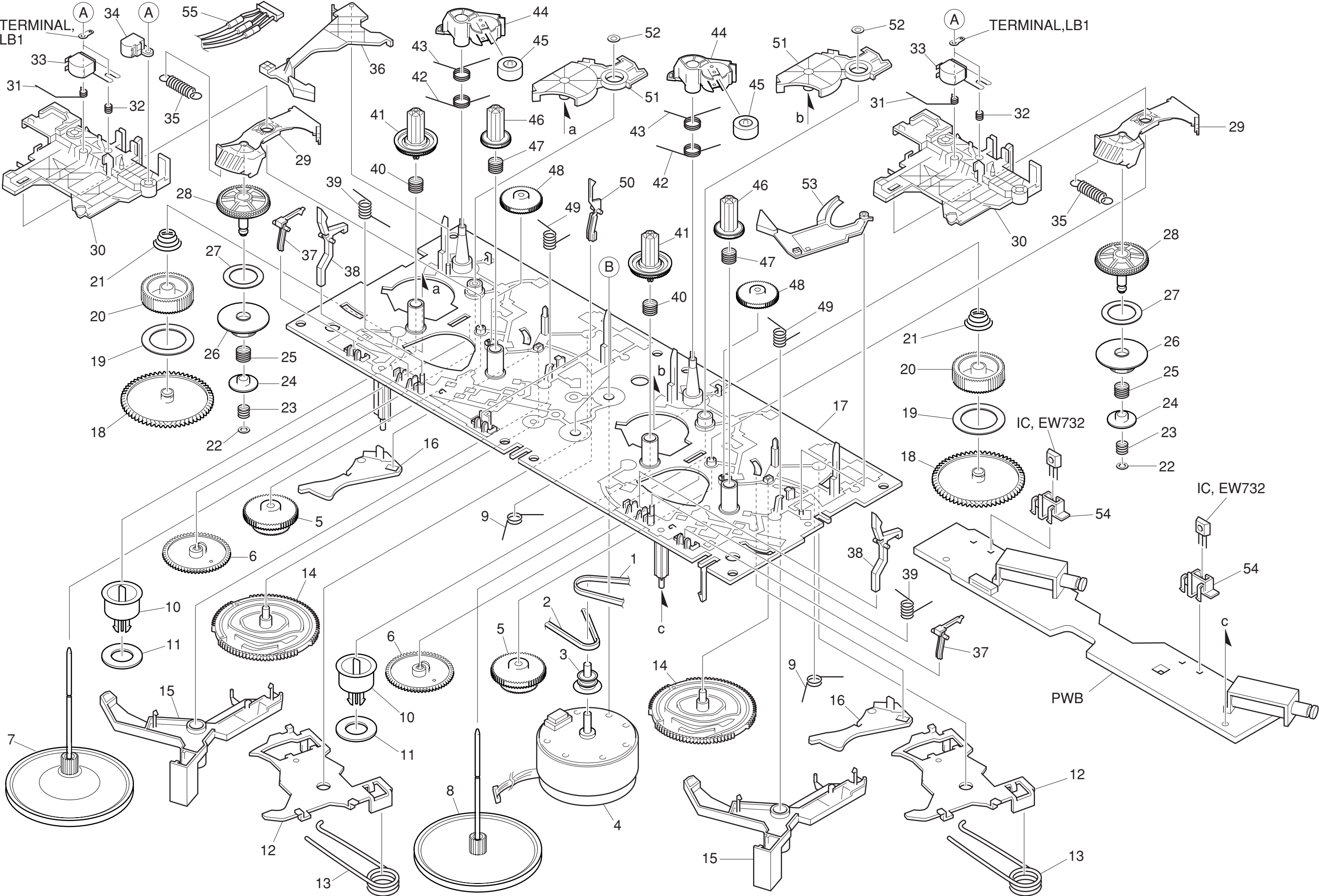


# MECHANICAL PARTS LIST 1 / 1

| REF. NO. | PART NO.       | KANRI NO. | DESCRIPTION              | REF. NO. | PART NO.       | KANRI NO. | DESCRIPTION                         |
|----------|----------------|-----------|--------------------------|----------|----------------|-----------|-------------------------------------|
| 1        | 8B-NF9-008-010 |           | WINDOW, CASS 1           | 28       | 88-911-101-110 |           | FF-CABLE, 11P 1.25                  |
| 2        | 8B-NF9-009-010 |           | WINDOW, CASS 2           | 29       | 8B-NF9-207-010 |           | GUIDE, FL 90.2-20                   |
| 3        | 8B-NF9-003-110 |           | BOX, CASS 1              | 30       | 8A-NF8-206-010 |           | HLDR, PWB M                         |
| 4        | 8B-NF9-004-110 |           | BOX, CASS 2              | 31       | 8B-NF9-006-010 |           | PANEL, TRAY                         |
| 5        | 8A-NF8-281-010 |           | SPR-T, EJECT 1           | 32       | 88-906-251-110 |           | FF-CABLE, 6P 1.25 (RVS-FACE)        |
| 6        | 8A-NF8-282-010 |           | SPR-T, EJECT 2           | 33       | 8A-NF9-609-010 |           | F-CABLE, 9P 2.5 480MM<U, EZ>        |
| 7        | 8B-NF9-020-010 |           | KNOB, RTRY JOG           | 34       | 8B-NF9-072-010 |           | CABI, REAR EZSM<EZ>                 |
| 8        | 8B-NF9-019-010 |           | KNOB, RTRY VOL           | 34       | 8B-NF9-071-010 |           | CABI, REAR LHSM<LH>                 |
| 9        | 8B-NF9-007-010 |           | PANEL, JOG               | 34       | 8B-NF9-069-010 |           | CABI, REAR USM<300U>                |
| 10       | 8B-NF9-032-010 |           | CABI, FR<LH, EZ>         | 34       | 8B-NF9-070-010 |           | CABI, REAR USM 305<305U>            |
| 10       | 8B-NF9-001-010 |           | CABI, FR U<U>            | 35       | 8B-NF9-211-010 |           | HLDR, TR S                          |
| 11       | 8Z-NF6-210-010 |           | DMPR, 150 N              | 36       | 8A-NF9-211-010 |           | HLDR, PWB PT HI                     |
| 12       | 87-CE3-023-010 |           | BADGE, AIWA 30N SILV     | 37       | 87-NF4-221-010 |           | HLDR, CABLE                         |
| 13       | 8B-NF9-035-010 |           | WINDOW, DISP H<LH, EZ>   | 38       | 87-A80-092-010 |           | AC CORD ASSY, E BLK SUN FAI<LH, EZ> |
| 13       | 8B-NF9-010-010 |           | WINDOW, DISP U<300U>     | 38       | 87-A80-110-010 |           | AC CORD ASSY, U SPT-2W<U>           |
| 13       | 8B-NF9-037-010 |           | WINDOW, DISP U 305<305U> | 39       | 87-085-185-010 |           | BUSHING, AC CORD (E)<LH, EZ>        |
| 14       | 8B-NF9-026-010 |           | PANEL, LEFT              | 39       | 87-A91-422-010 |           | BUSHING, AC CORD (U)<U>             |
| 15       | 8B-NF9-027-010 |           | PANEL, TOP               | 40       | 8B-NF9-025-010 |           | PANEL, RIGHT                        |
| 16       | 8B-NF9-011-110 |           | KEY, POWER               | A        | 87-067-703-010 |           | TAPPING SCREW, BVT2+3-10            |
| 17       | 8B-NF9-021-010 |           | REFLECTOR, ECO           | B        | 87-NF4-224-010 |           | S-SCREW, IT3B+3-8 CU                |
| 18       | 8B-NF9-014-010 |           | KEY, CD                  | C        | 87-078-200-010 |           | S-SCREW, ITC+4-8 R                  |
| 19       | 8B-NF9-013-010 |           | KEY, FUN                 | D        | 87-067-689-010 |           | TAPPING SCREW, BVTT+3-8             |
| 20       | 8B-NF9-016-010 |           | KEY, OPE P               | E        | 87-721-096-410 |           | QT2+3-10 GLD                        |
| 21       | 8B-NF9-012-010 |           | KEY, T-BASS              | F        | 87-721-097-410 |           | QT2+3-12 GLD                        |
| 22       | 8B-NF9-018-010 |           | KEY, GEQ                 | G        | 87-067-641-010 |           | UTT2+3-8 (W/O SLOT) BL              |
| 23       | 87-NF4-216-010 |           | HLDR, LOCK 1             |          |                |           |                                     |
| 24       | 86-NF9-224-010 |           | SPR-C, LOCK              |          |                |           |                                     |
| 25       | 82-NF5-229-010 |           | PLATE, LOCK              |          |                |           |                                     |
| 26       | 87-NF4-217-110 |           | HLDR, LOCK 2             |          |                |           |                                     |
| 27       | 88-908-301-110 |           | FF-CABLE, 8P 1.25        |          |                |           |                                     |

## COLOR NAME TABLE

| Basic color symbol | Color             | Basic color symbol | Color              | Basic color symbol | Color              |
|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|
| B                  | Black             | C                  | Cream              | D                  | Orange             |
| G                  | Green             | H                  | Gray               | L                  | Blue               |
| LT                 | Transparent Blue  | N                  | Gold               | P                  | Pink               |
| R                  | Red               | S                  | Silver             | ST                 | Titan Silver       |
| T                  | Brown             | V                  | Violet             | W                  | White              |
| WT                 | Transparent White | Y                  | Yellow             | YT                 | Transparent Yellow |
| LM                 | Metallic Blue     | LL                 | Light Blue         | GT                 | Transparent Green  |
| LD                 | Dark Blue         | DT                 | Transparent Orange | GM                 | Metallic Green     |
| YM                 | Metallic Yellow   | DM                 | Metallic Orange    | PT                 | Transparent Pink   |
| LA                 | Aqua Blue         | GL                 | Light Green        | HT                 | Transparent Gray   |



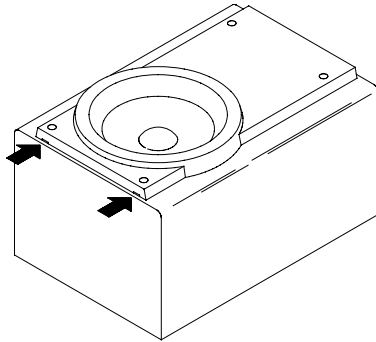
# TAPE MECHANISM PARTS LIST 1 / 1

| REF. NO. | PART NO.       | KANRI NO. | DESCRIPTION          | REF. NO. | PART NO.       | KANRI NO. | DESCRIPTION          |
|----------|----------------|-----------|----------------------|----------|----------------|-----------|----------------------|
| 1        | 8Z-ZM3-227-010 |           | BELT,MAIN M3         | 31       | 8Z-ZM3-233-010 |           | SPR-T,BRG M3         |
| 2        | 8Z-ZM3-235-010 |           | BELT,MAIN L          | 32       | 84-ZM2-227-310 |           | SPR-C,AZIMUTH        |
| 3        | 8Z-ZM1-235-010 |           | PULLEY,MOT           | 33       | 87-A90-403-110 |           | HEAD,RPH MS15R       |
| 4        | 87-045-347-010 |           | MOT,SHU2L 70         | 34       | 87-A90-404-010 |           | HEAD,EH LE15B        |
| 5        | 8Z-ZM1-232-010 |           | GEAR,IDL FF/REW      | 35       | 8Z-ZM3-239-010 |           | SPR-E,FR             |
| 6        | 8Z-ZM3-244-010 |           | GEAR,CAM TD20        | 36       | 8Z-ZM3-211-010 |           | LEVER,EJECT R        |
| 7        | 8Z-ZM3-256-010 |           | FLY-WHL ASSY,M3 R    | 37       | 8Z-ZM3-225-010 |           | LEVER,STOP           |
| 8        | 8Z-ZM3-255-010 |           | FLY-WHL ASSY,M3 L    | 38       | 8Z-ZM3-221-010 |           | LEVER,CAS            |
| 9        | 8Z-ZM3-231-010 |           | SPR-T,TRIG           | 39       | 8Z-ZM3-234-010 |           | SPR-T,LVR CAS        |
| 10       | 8Z-ZM3-213-010 |           | CLR,MG               | 40       | 8Z-ZM3-223-010 |           | SPR-C,REEL R M3      |
| 11       | 82-ZM3-616-010 |           | RING MAGNET 4        | 41       | 8Z-ZM1-225-110 |           | GEAR,REEL R          |
| 12       | 8Z-ZM3-243-010 |           | LEVER ASSY,HD UP     | 42       | 8Z-ZM3-240-010 |           | SPR-T,T-UP M3        |
| 13       | 8Z-ZM3-238-010 |           | SPR-T,HD UP          | 43       | 8Z-ZM3-237-010 |           | SPR-T,PINCH M3       |
| 14       | 8Z-ZM3-219-010 |           | GEAR,CAM M3          | 44       | 8Z-ZM3-215-010 |           | LEVER,PINCH M3       |
| 15       | 8Z-ZM3-206-010 |           | LEVER,TRIG           | 45       | 8Z-ZM1-261-110 |           | ROLLER ASSY,PINCH    |
| 16       | 8Z-ZM3-209-010 |           | LEVER,CAM FR         | 46       | 8Z-ZM1-226-010 |           | GEAR,REEL L          |
| 17       | 8Z-ZM3-203-010 |           | CHAS ASSY,M3         | 47       | 8Z-ZM3-222-010 |           | SPR-C,REEL L M3      |
| 18       | 8Z-ZM1-228-010 |           | GEAR,SLIP T-UP B     | 48       | 8Z-ZM3-251-010 |           | GEAR,IDL REW M3      |
| 19       | 8Z-ZM1-265-010 |           | FELT,T-UP            | 49       | 8Z-ZM3-236-010 |           | SPR-T,PLAY M3        |
| 20       | 8Z-ZM1-227-010 |           | GEAR,SLIP T-UP A     | 50       | 82-ZM1-240-110 |           | LVR,REC(*)           |
| 21       | 8Z-ZM1-251-110 |           | SPR-C,T-UP SLIP      | 51       | 8Z-ZM3-216-010 |           | LEVER,T-UP M3        |
| 22       | 8Z-ZM1-275-010 |           | W-L,1,47-4-0.25      | 52       | 87-B10-301-010 |           | W-L,1.63-3.2-05 SLIT |
| 23       | 8Z-ZM1-257-010 |           | SPR-C,F/R            | 53       | 8Z-ZM3-212-010 |           | LEVER,EJECT L        |
| 24       | 8Z-ZM1-236-010 |           | CLR,SLIP FF/REW      | 54       | 8Z-ZM3-214-010 |           | HLDR,IC              |
| 25       | 8Z-ZM3-226-010 |           | SPR-C,FR M3          | 55       | 86-ZM3-605-110 |           | CONN ASSY,8P -RPB    |
| 26       | 8Z-ZM3-250-010 |           | GEAR,SLIP F/R A M3   | A        | 84-ZM2-242-010 |           | S-SCREW,AZ1-2-6.4    |
| 27       | 8Z-ZM1-269-010 |           | FELT,FF/REW 2        | B        | 8Z-ZM2-220-110 |           | V+2.6 ZZM-2          |
| 28       | 8Z-ZM1-238-110 |           | GEAR,SLIP FF/REW B 2 |          |                |           |                      |
| 29       | 8Z-ZM3-220-010 |           | LEVER,FR M3          |          |                |           |                      |
| 30       | 8Z-ZM3-205-010 |           | LEVER,PLAY M3        |          |                |           |                      |

## GENERAL SPEAKER DISASSEMBLY INSTRUCTIONS (FOR REFERENCE)

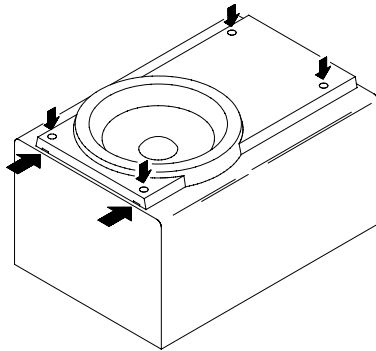
### Type.1

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



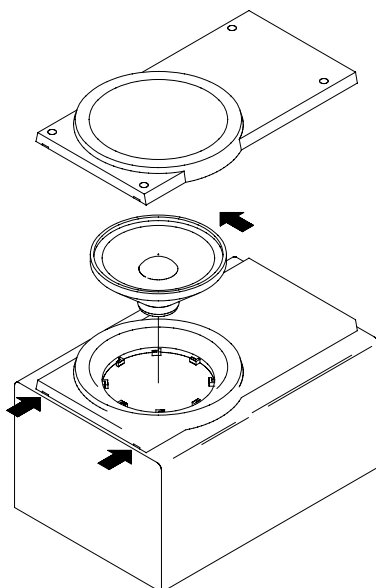
### Type.2

Remove the grill frame and four pieces of rubber caps by pulling out with a flat-bladed screwdriver. Remove the screws from hole where installed rubber caps. Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.

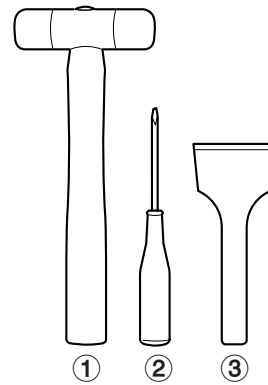


### Type.3

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Turn the speaker unit to counter-clockwise direction while inserting a flat-bladed screwdriver into one of the hollows around speaker unit, and then remove the speaker unit. After replacing the speaker unit, install it turning to clockwise direction until "click" sound comes out.



### Type.4



### TOOLS

- ① Plastic head hammer
- ② (⊖) flat head screwdriver
- ③ Cut chisel

### How to Remove the PANEL, FR

1. Insert the (⊖) flat head screwdriver tip into the gap between the PANEL, FR and the PANEL, SPKR. Tap the head of the (⊖) flat head screwdriver with the plastic hammer head, and create the clearance as shown in Fig-1.
2. Insert the cut chisel in the clearance, and tap the head of the cut chisel with plastic hammer as shown in Fig-2, to remove the PANEL, FR.
3. Place the speaker horizontally. Tap head of the cut chisel with plastic hammer as shown in Fig-3, and remove the PANEL, FR completely.

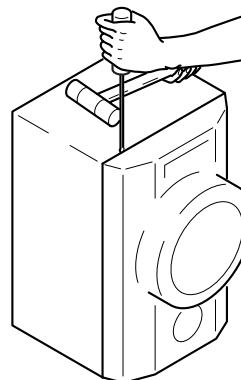


Fig-1

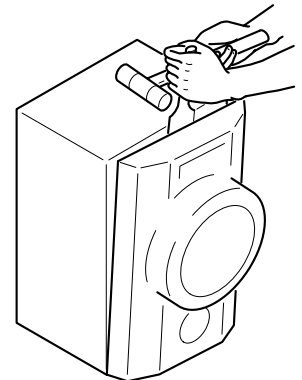


Fig-2

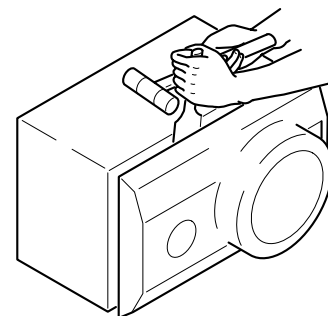


Fig-3

### How to Attach the PANEL, FR

Attach the PANEL, FR to the PANEL, SPKR. Tap the four corners of the PANEL, FR with the plastic hammer to fit the PANEL, FR into the PANEL, SPKR completely.

## SPEAKER PARTS LIST

SX-NAJ302(YUSC,YUSL,YUSN,YUS1N,YUSC9)

SX-NSZ302 (YSC,YSL,YLSC,YLSL,YSC9,YLSC9)

| REF. NO. | PART NO.       | KANRI<br>NO. | DESCRIPTION                        |
|----------|----------------|--------------|------------------------------------|
| 1        | 8B-NSK-001-010 |              | PANEL,FR R                         |
| 2        | 8B-NSK-002-010 |              | PANEL,FR L                         |
| 3        | 8B-NSK-005-010 |              | PROTECTOR, ASSY                    |
| 4        | 8B-NSK-602-010 |              | SPKR,W 160<EXCEPT YLSC,YLSL,YLSC9> |
| 4        | 8B-NSK-608-010 |              | SPKR,W 160 H<YLSC,YLSL,YLSC9>      |
| 5        | 8B-NSK-604-010 |              | SPKR,T 60<EXCEPT YSC,YSL,YSC9>     |
| 5        | 8B-NSK-610-010 |              | SPKR,T 60<YSC,YSL,YSC9>            |
| 6        | 87-NS7-611-010 |              | CORD,SPKR                          |
| 7        | 87-NSH-612-010 |              | SPKR,CERAMIC ASSY                  |

## SPEAKER PARTS LIST

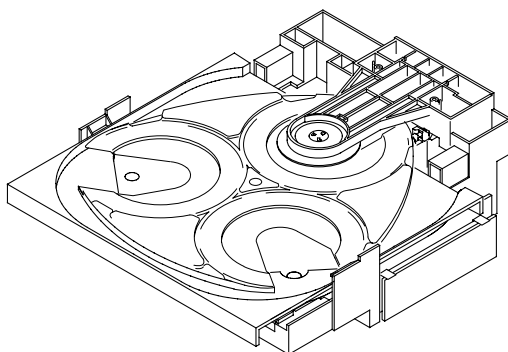
SX-R145(YUSC,YUSN,YUS1N)

| REF. NO. | PART NO.       | KANRI<br>NO. | DESCRIPTION        |
|----------|----------------|--------------|--------------------|
| 1        | 81-VSA-010-010 |              | SPKR,CORD          |
| 2        | 87-010-384-010 |              | CAP,E 100-25 M SME |
| 3        | 8A-YS4-610-010 |              | CORD,SPKR 3.5      |
| 4        | 8A-YS4-601-010 |              | SPKR,80            |
| 5        | 8A-YS4-006-010 |              | GRILLE, FRAME ASSY |

## ACCESSORIES / PACKAGE LIST

| REF. NO. | PART NO.       | KANRI<br>NO. | DESCRIPTION                  |
|----------|----------------|--------------|------------------------------|
| 1        | 8B-NF9-912-010 |              | IB,LH(ESP)M<LH>              |
| 1        | 8B-NF9-913-010 |              | IB,U(ESF)M<U>                |
| 1        | 8B-NF9-915-010 |              | IB,EZ(9L)M-SZ305<305EZ>      |
| 1        | 8B-NF9-926-010 |              | IB,EZ(9L)M<300EZ>            |
| 2        | 8Z-NF9-701-210 |              | RC UNIT,ZAS02                |
| 3        | 87-006-225-010 |              | AM,LOOP ANT NC2<U,LH>        |
| 3        | 87-A92-150-010 |              | ANT,LOOP AM NO-CONT<300EZ>   |
| 3        | 87-006-268-010 |              | ANT,LOOP AM<305EZ>           |
| 4        | 87-043-115-010 |              | FEEDER-ANT FM<U,LH>          |
| 4        | 87-A90-118-010 |              | ANT,WIRE FM(Z)<EZ>           |
| △ 5      | 87-A91-017-010 |              | PLUG CONVERSION, JT-0476<LH> |

アイワ株式会社 〒110-8710 東京都台東区池之端1-2-11 ☎03(3827)3111 (代表)  
**AIWA CO.,LTD.** 2-11, IKENOHATA 1-CHOME, TAITO-KU, TOKYO 110, JAPAN TEL:03 (3827) 3111



# SERVICE MANUAL

---

CD MECHANISM

BASIC CD MECHANISM : 3ZG-2E3NM  
3ZG-2E7NF

---

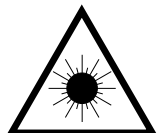
| TYPE     | BASIC CD MECHANISM |
|----------|--------------------|
| YZD3NCM  | 3ZG-2E3NM          |
| YZD3N1CM | 3ZG-2E3NM          |
| ZD7NFD   | 3ZG-2E7NF          |
| ZD3GNDM  | 3ZG-2E3NM          |

# PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

## WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

## VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylitävälle näkymättömälle lasersäteilylle.

## WARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvisning, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

## CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

## ATTENTION

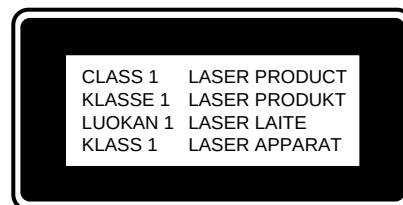
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

## ADVARSEL!

Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.

The CLASS 1 LASER PRODUCT label is located on the rear exterior.

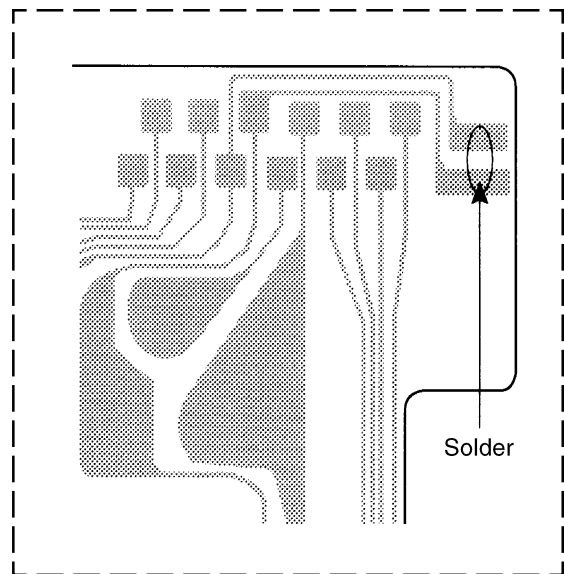


## Precaution to replace Optical block (KSS-213F, 5ZL-3)

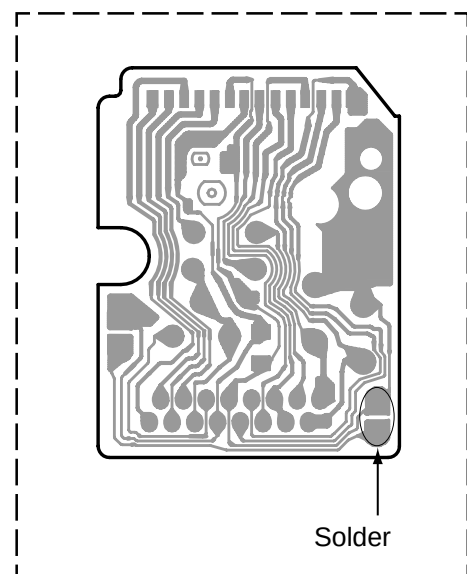
Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

- 1) After the connection, remove solder shown in the right figure.

### PICK-UP ASSY PWB (KSS-213F: 87-A90-836-010) MODEL



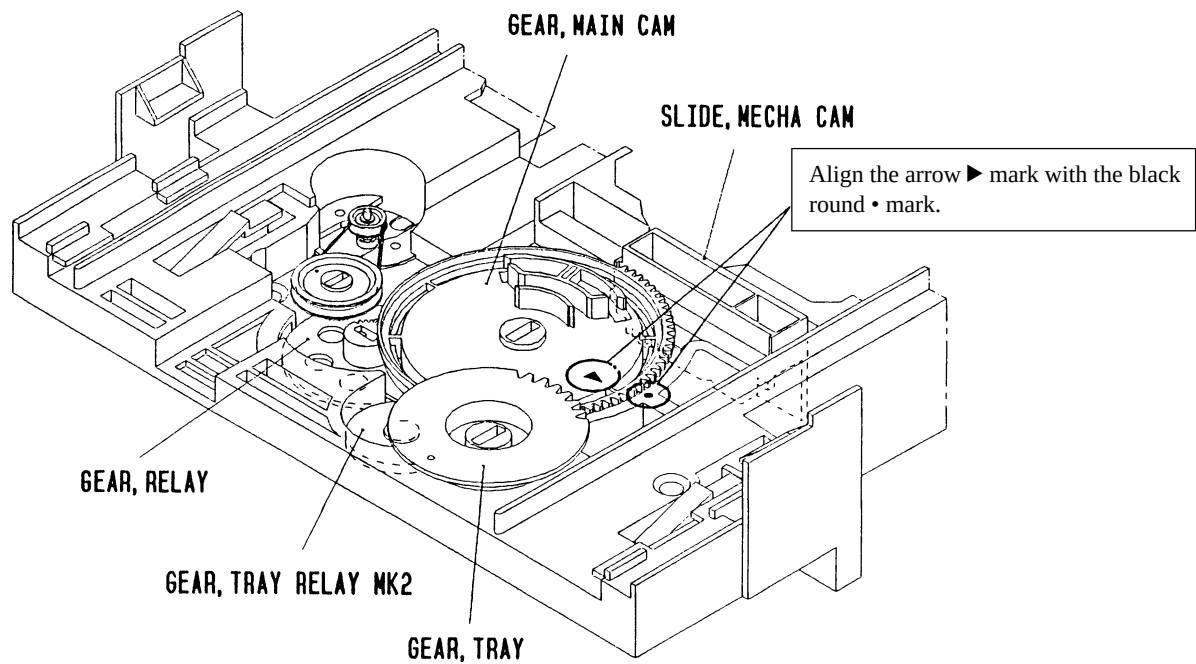
### PICK-UP ASSY PWB (5ZL-3: M8-5ZL-395-000) MODEL



## How to Adjust the Rotating Phase of the Gear, Main Cam

- 1) Push down the hooking catch of the CHAS. MECH, and remove the TRAY.
- 2) Align the arrow mark of the Gear, Main Cam with the black round mark of the CHAS, MECHA as shown below.
- 3) Confirm that the Slide, Mech Cam is located in the right position, then insert the TRAY gently.

**Caution:** If the rotating phase of the Gear, Main Cam is incorrectly adjusted, the chucking operation and tray movement will have malfunction.



## ELECTRICAL MAIN PARTS LIST-1/2

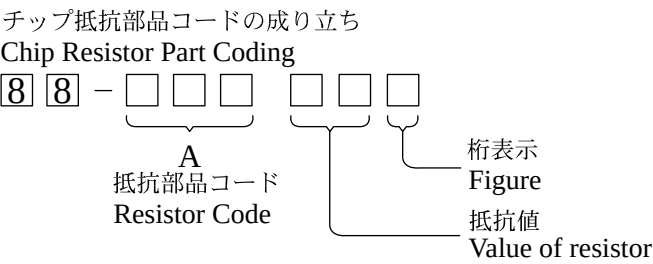
| REF. NO    | PART NO.       | KANRI NO. | DESCRIPTION                             | REF. NO | PART NO.       | KANRI NO. | DESCRIPTION                           |
|------------|----------------|-----------|-----------------------------------------|---------|----------------|-----------|---------------------------------------|
| IC         |                |           |                                         | C128    | 87-A10-504-080 |           | C-CAP,U 0.047-16 K B<EXCEPT ZD3GNDM>  |
|            | 87-A21-821-030 |           | C-IC,LC78645E<EXCEPT ZD3GNDM>           | C129    | 87-010-403-080 |           | CAP, ELECT 3.3-50V                    |
|            | 87-A21-821-130 |           | C-IC,LC78645NE<ZD3GNDM>                 | C130    | 87-010-759-020 |           | C-CAP,U 0.1-25 Z F<ZD3GNDM>           |
|            | 87-A21-822-010 |           | IC,LA6568                               | C130    | 87-010-759-080 |           | C-CAP,U 0.1-25F<EXCEPT ZD3GNDM>       |
|            |                |           |                                         | C131    | 87-010-759-020 |           | C-CAP,U 0.1-25 Z F<ZD3GNDM>           |
| TRANSISTOR |                |           |                                         | C131    | 87-010-759-080 |           | C-CAP,U 0.1-25F<EXCEPT ZD3GNDM>       |
|            | 87-026-609-080 |           | TR,KTA1266GR                            | C132    | 87-010-263-080 |           | CAP, ELECT 100-10V                    |
|            | 87-026-610-080 |           | TR,KTC3198GR                            | C133    | 87-010-405-080 |           | CAP, ELECT 10-50V                     |
|            | 87-A30-076-080 |           | C-TR,2SC3052F                           | C134    | 87-010-759-020 |           | C-CAP,U 0.1-25 Z F<ZD3GNDM>           |
|            | 87-A30-515-080 |           | TR,2SA19790/Y                           | C134    | 87-010-759-080 |           | C-CAP,U 0.1-25F<EXCEPT ZD3GNDM>       |
|            | 87-A30-075-080 |           | C-TR,2SA1235F<ZD3GNDM>                  | C135    | 87-010-260-080 |           | CAP, ELECT 47-25V                     |
| DIODE      |                |           |                                         | C136    | 87-010-759-020 |           | C-CAP,U 0.1-25 Z F<ZD3GNDM>           |
|            | 87-A40-003-080 |           | ZENER,MTZJ4.3A<EXCEPT ZD7NFD>           | C136    | 87-010-759-080 |           | C-CAP,U 0.1-25F<EXCEPT ZD3GNDM>       |
|            | 87-A40-743-080 |           | ZENER,UZ4.3BSA<ZD7NFD>                  | C137    | 87-012-349-020 |           | C-CAP,S 1000P-50 J CH<ZD3GNDM>        |
|            | 87-020-465-080 |           | DIODE,1SS133 (110MA)                    | C137    | 87-A10-915-080 |           | C-CAP,U 1000P-25 J CH<EXCEPT ZD3GNDM> |
|            | 87-A40-337-080 |           | ZENER,MTZJ 6.8B<EXCEPT ZD7NFD>          | C138    | 87-012-349-080 |           | C-CAP,S 1000P-50 CH                   |
|            | 87-A40-753-080 |           | ZENER,UZ6.8BSB<ZD7NFD>                  | C203    | 87-010-112-080 |           | CAP, ELECT 100-16V                    |
| 3CD C.B    |                |           |                                         | C204    | 87-010-759-020 |           | C-CAP,U 0.1-25 Z F<ZD3GNDM>           |
| C1         | 87-010-759-020 |           | C-CAP,U 0.1-25 Z F<ZD3GNDM>             | C204    | 87-010-759-080 |           | C-CAP,U 0.1-25F<EXCEPT ZD3GNDM>       |
| C1         | 87-010-759-080 |           | C-CAP,U 0.1-25F<EXCEPT ZD3GNDM>         | C205    | 87-010-263-080 |           | CAP, ELECT 100-10V                    |
| C2         | 87-010-263-080 |           | CAP, ELECT 100-10V                      | C208    | 87-010-759-020 |           | C-CAP,U 0.1-25 Z F<ZD3GNDM>           |
| C3         | 87-012-349-020 |           | C-CAP,S 1000P-50 J CH<ZD3GNDM>          | C208    | 87-010-759-080 |           | C-CAP,U 0.1-25F<EXCEPT ZD3GNDM>       |
| C3         | 87-A10-915-080 |           | C-CAP,U 1000P-25 J CH<EXCEPT ZD3GNDM>   | C212    | 87-010-405-080 |           | CAP, ELECT 10-50V                     |
| C4         | 87-010-759-020 |           | C-CAP,U 0.1-25 Z F<ZD3GNDM>             | C213    | 87-010-759-020 |           | C-CAP,U 0.1-25 Z F<ZD3GNDM>           |
| C4         | 87-010-759-080 |           | C-CAP,U 0.1-25F<EXCEPT ZD3GNDM>         | C213    | 87-010-759-080 |           | C-CAP,U 0.1-25F<EXCEPT ZD3GNDM>       |
| C5         | 87-010-263-080 |           | CAP, ELECT 100-10V                      | C301    | 87-010-382-080 |           | CAP, ELECT 22-25V                     |
| C6         | 87-010-405-080 |           | CAP, ELECT 10-50V                       | C302    | 87-010-759-020 |           | C-CAP,U 0.1-25 Z F<ZD3GNDM>           |
| C101       | 87-010-992-080 |           | C-CAP,S 0.047-25 B<ZD3GNDM>             | C302    | 87-010-759-080 |           | C-CAP,U 0.1-25F<EXCEPT ZD3GNDM>       |
| C101       | 87-A10-504-080 |           | C-CAP,U 0.047-16 K B<EXCEPT ZD3GNDM>    | C303    | 87-010-260-080 |           | CAP, ELECT 47-25V                     |
| C102       | 87-010-759-020 |           | C-CAP,U 0.1-25 Z F<ZD3GNDM>             | C304    | 87-010-759-020 |           | C-CAP,U 0.1-25 Z F<ZD3GNDM>           |
| C102       | 87-010-759-080 |           | C-CAP,U 0.1-25F<EXCEPT ZD3GNDM>         | C304    | 87-010-759-080 |           | C-CAP,U 0.1-25F<EXCEPT ZD3GNDM>       |
| C103       | 87-012-195-020 |           | C-CAP,U 100P-50 J CH<ZD3GNDM>           | C305    | 87-012-274-020 |           | C-CAP,U 1000P-50 K B<ZD3GNDM>         |
| C103       | 87-012-195-080 |           | C-CAP,U 100P-50CH<EXCEPT ZD3GNDM>       | C305    | 87-012-274-080 |           | CHIP CAP,U 1000P-50B<EXCEPT ZD3GNDM>  |
| C104       | 87-012-282-020 |           | C-CAP,U 4700P-50 K B<ZD3GNDM>           | C306    | 87-A11-567-080 |           | C-CAP,S 0.01-50 K B                   |
| C104       | 87-012-282-080 |           | CAP, U 4700P-50<EXCEPT ZD3GNDM>         | C401    | 87-012-195-020 |           | C-CAP,U 100P-50 J CH<ZD3GNDM>         |
| C105       | 87-010-759-020 |           | C-CAP,U 0.1-25 Z F<ZD3GNDM>             | C401    | 87-012-195-080 |           | C-CAP,U 100P-50CH<EXCEPT ZD3GNDM>     |
| C105       | 87-010-759-080 |           | C-CAP,U 0.1-25F<EXCEPT ZD3GNDM>         | C402    | 87-012-195-020 |           | C-CAP,U 100P-50 J CH<ZD3GNDM>         |
| C106       | 87-010-263-080 |           | CAP, ELECT 100-10V                      | C402    | 87-012-195-080 |           | C-CAP,U 100P-50CH<EXCEPT ZD3GNDM>     |
| C107       | 87-010-263-080 |           | CAP, ELECT 100-10V                      | C403    | 87-012-195-020 |           | C-CAP,U 100P-50 J CH<ZD3GNDM>         |
| C108       | 87-010-759-020 |           | C-CAP,U 0.1-25 Z F<ZD3GNDM>             | C403    | 87-012-195-080 |           | C-CAP,U 100P-50CH<EXCEPT ZD3GNDM>     |
| C108       | 87-010-759-080 |           | C-CAP,U 0.1-25F<EXCEPT ZD3GNDM>         | C404    | 87-012-195-020 |           | C-CAP,U 100P-50 J CH<ZD3GNDM>         |
| C109       | 87-010-263-080 |           | CAP, ELECT 100-10V                      | C404    | 87-012-195-080 |           | C-CAP,U 100P-50CH<EXCEPT ZD3GNDM>     |
| C110       | 87-010-405-080 |           | CAP, ELECT 10-50V                       | C405    | 87-012-195-020 |           | C-CAP,U 100P-50 J CH<ZD3GNDM>         |
| C111       | 87-010-401-080 |           | CAP, ELECT 1-50V                        | C405    | 87-012-195-080 |           | C-CAP,U 100P-50CH<EXCEPT ZD3GNDM>     |
| C114       | 87-012-188-080 |           | C-CAP,U 47P-50 CH<EXCEPT ZD3GNDM>       | C601    | 87-010-759-020 |           | C-CAP,U 0.1-25 Z F<ZD3GNDM>           |
| C114       | 87-012-188-020 |           | C-CAP,U 47P-50 J CH<ZD3GNDM>            | C602    | 87-010-263-080 |           | CAP, ELECT 100-10V<ZD3GNDM>           |
| C115       | 87-010-759-020 |           | C-CAP,U 0.1-25 Z F<ZD3GNDM>             | C603    | 87-012-180-020 |           | C-CAP,U 22P-50 J CH<ZD3GNDM>          |
| C115       | 87-010-759-080 |           | C-CAP,U 0.1-25F<EXCEPT ZD3GNDM>         | CN1     | 87-A60-429-010 |           | CONN,16P H TOC-A                      |
| C116       | 87-010-263-080 |           | CAP, ELECT 100-10V                      | CN202   | 87-A60-130-010 |           | CONN,5P V FE                          |
| C117       | 87-010-263-080 |           | CAP, ELECT 100-10V                      | CN203   | 87-099-199-010 |           | CONN,6P 6216 H                        |
| C118       | 87-010-759-020 |           | C-CAP,U 0.1-25 Z F<ZD3GNDM>             | CN301   | 87-A60-154-010 |           | CONN,6P H FE                          |
| C118       | 87-010-759-080 |           | C-CAP,U 0.1-25F<EXCEPT ZD3GNDM>         | CN401   | 87-099-201-010 |           | CONN,8P 6216 H                        |
| C121       | 87-010-263-080 |           | CAP, ELECT 100-10V                      | FB601   | 87-008-372-080 |           | FILTER, EMI BL OIRNI<ZD3GNDM>         |
| C122       | 87-010-759-020 |           | C-CAP,U 0.1-25 Z F<ZD3GNDM>             | L101    | 87-005-469-080 |           | COIL 4.7UH FLR50                      |
| C122       | 87-010-759-080 |           | C-CAP,U 0.1-25F<EXCEPT ZD3GNDM>         | LED601  | 87-A40-558-010 |           | LED,SLZ-8128A-01-A<ZD3GNDM>           |
| C123       | 87-012-169-080 |           | C-CAP,U 7P-50 CH<EXCEPT ZD3GNDM>        | M201    | 87-045-305-010 |           | MOTOR,RF-500TB DC-5V(2MA)             |
| C123       | 87-012-169-020 |           | C-CAP,U 7P-50 D CH<ZD3GNDM>             | R104    | 87-012-278-080 |           | C-CAP,U 2200P-50 B<EXCEPT ZD3GNDM>    |
| C124       | 87-012-172-020 |           | C-CAP,U 10P-50 D CH<ZD3GNDM>            | R104    | 87-012-278-020 |           | C-CAP,U 2200P-50 K B<ZD3GNDM>         |
| C124       | 87-012-172-080 |           | CAPACITOR CHIP U 10P CH<EXCEPT ZD3GNDM> | R106    | 87-012-274-020 |           | C-CAP,U 1000P-50 K B<ZD3GNDM>         |
| C125       | 87-A11-177-080 |           | C-CAP,S 0.15-16 K B<EXCEPT ZD3GNDM>     | R106    | 87-012-274-080 |           | CHIP CAP,U 1000P-50B<EXCEPT ZD3GNDM>  |
| C125       | 87-016-083-020 |           | C-CAP,S 0.15-16 RK<ZD3GNDM>             | S401    | 87-036-109-010 |           | PUSH SWITCH                           |
| C126       | 87-010-263-080 |           | CAP, ELECT 100-10V                      | S402    | 87-036-109-010 |           | PUSH SWITCH                           |
| C127       | 87-010-759-020 |           | C-CAP,U 0.1-25 Z F<ZD3GNDM>             | X101    | 87-A70-318-010 |           | VIB,XTAL 33.8688MHZ CSA-309           |
| C127       | 87-010-759-080 |           | C-CAP,U 0.1-25F<EXCEPT ZD3GNDM>         | T-T C.B |                |           |                                       |
| C128       | 87-010-992-080 |           | C-CAP,S 0.047-25 B<ZD3GNDM>             | C401    | 87-A11-148-080 |           | CAP,TC U 0.1-50 Z F                   |
|            |                |           |                                         | CON401  | 86-NFZ-675-010 |           | CONN,5P H 6216-11H                    |
|            |                |           |                                         | M401    | 87-045-364-010 |           | MOTOR(BCH3B14)                        |
|            |                |           |                                         | PS401   | 87-026-573-010 |           | IC,GP1S53V<ZD7NFD>                    |

ELECTRICAL MAIN PARTS LIST-2/2

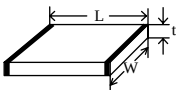
| REF. NO                   | PART NO.       | KANRI NO. | DESCRIPTION                          | REF. NO            | PART NO.       | KANRI NO. | DESCRIPTION                   |
|---------------------------|----------------|-----------|--------------------------------------|--------------------|----------------|-----------|-------------------------------|
| PS401                     | 87-A90-156-010 |           | SNSR,SG-240<EXCEPT ZD7NFD>           | MOTOR C.B (ZD7NFD) |                |           |                               |
| DRIVE C.B (EXCEPT ZD7NFD) |                |           |                                      | M1                 | 87-045-356-010 |           | MOT,RF-310TA 30<ZD7NFD>       |
| M1                        | 87-045-363-010 |           | MOT,MDN4RA3ETA1<EXCEPT ZD7NFD>       | M2                 | 87-045-358-010 |           | MOT,RF-310TA 43<ZD7NFD>       |
| M2                        | 87-045-358-010 |           | MOT,RF-310TA 43<EXCEPT ZD7NFD>       | PIN3               | 87-A60-670-010 |           | CONN,6P H 2MM JMT<ZD7NFD>     |
| PIN3                      | 87-A60-086-010 |           | CONN,6P H6216-11<EXCEPT ZD7NFD>      | SW1                | 87-A90-042-010 |           | SW,LEAF MSW-17310MVP0<ZD7NFD> |
| SW1                       | 87-A90-042-010 |           | SW,LEAF MSW-17310MVP0<EXCEPT ZD7NFD> |                    |                |           |                               |

- Regarding connectors, they are not stocked as they are not the initial order items.  
The connectors are available after they are supplied from connector manufacturers upon the order is received.

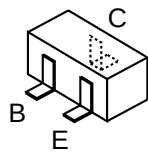
チップ抵抗部品コード／CHIP RESISTOR PART CODE



チップ抵抗  
Chip resistor

| 容量<br>Wattage | 種類<br>Type | 許容誤差<br>Tolerance | 記号<br>Symbol | 寸法／Dimensions (mm)                                                                  |     |      |      | 抵抗コード : A<br>Resistor Code : A |
|---------------|------------|-------------------|--------------|-------------------------------------------------------------------------------------|-----|------|------|--------------------------------|
|               |            |                   |              | 外形／Form                                                                             | L   | W    | t    |                                |
| 1/16W         | 1005       | ± 5%              | CJ           |  | 1.0 | 0.5  | 0.35 | 104                            |
| 1/16W         | 1608       | ± 5%              | CJ           |                                                                                     | 1.6 | 0.8  | 0.45 | 108                            |
| 1/10W         | 2125       | ± 5%              | CJ           |                                                                                     | 2   | 1.25 | 0.45 | 118                            |
| 1/8W          | 3216       | ± 5%              | CJ           |                                                                                     | 3.2 | 1.6  | 0.55 | 128                            |

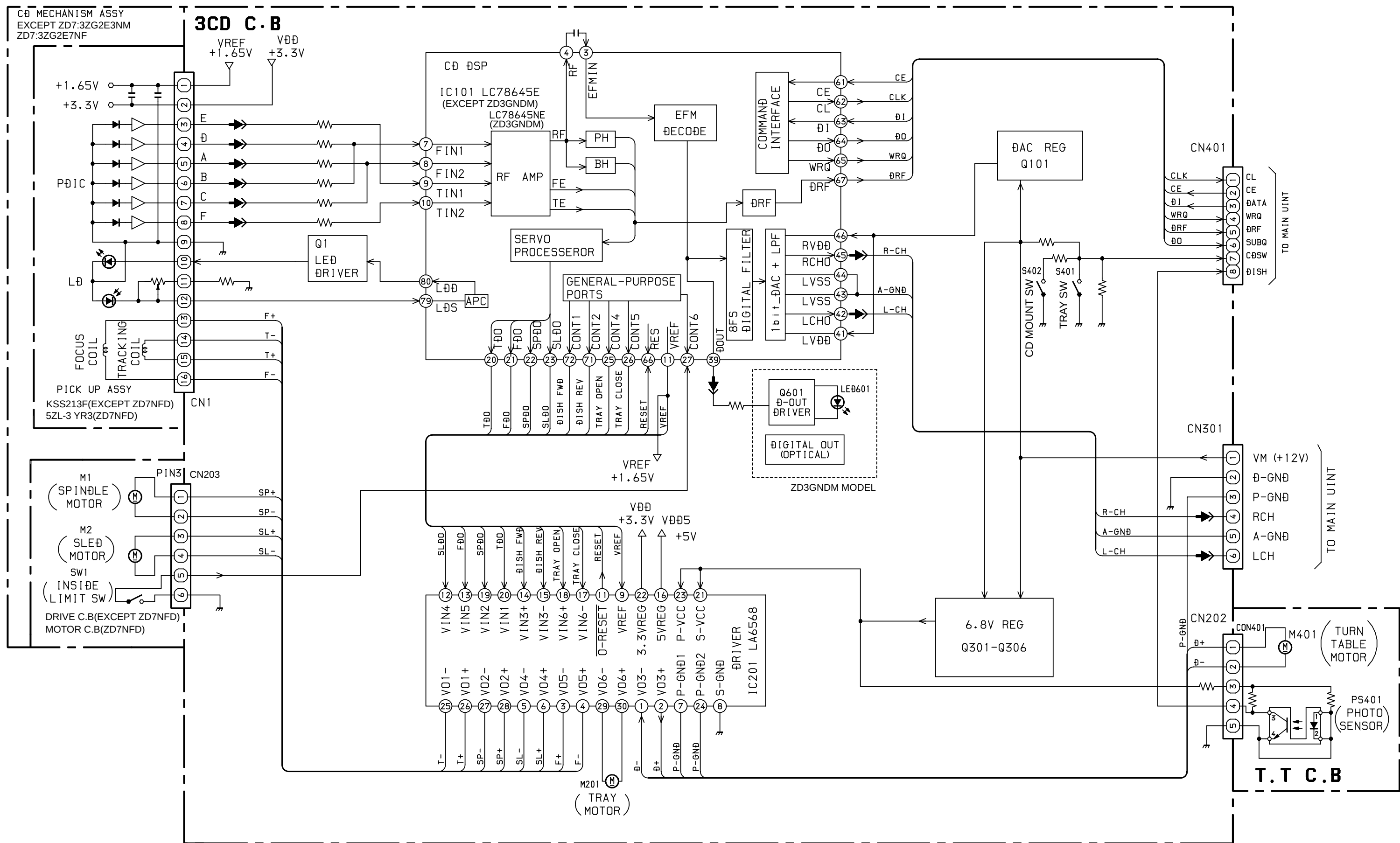
## TRANSISTOR ILLUSTRATION-1/1



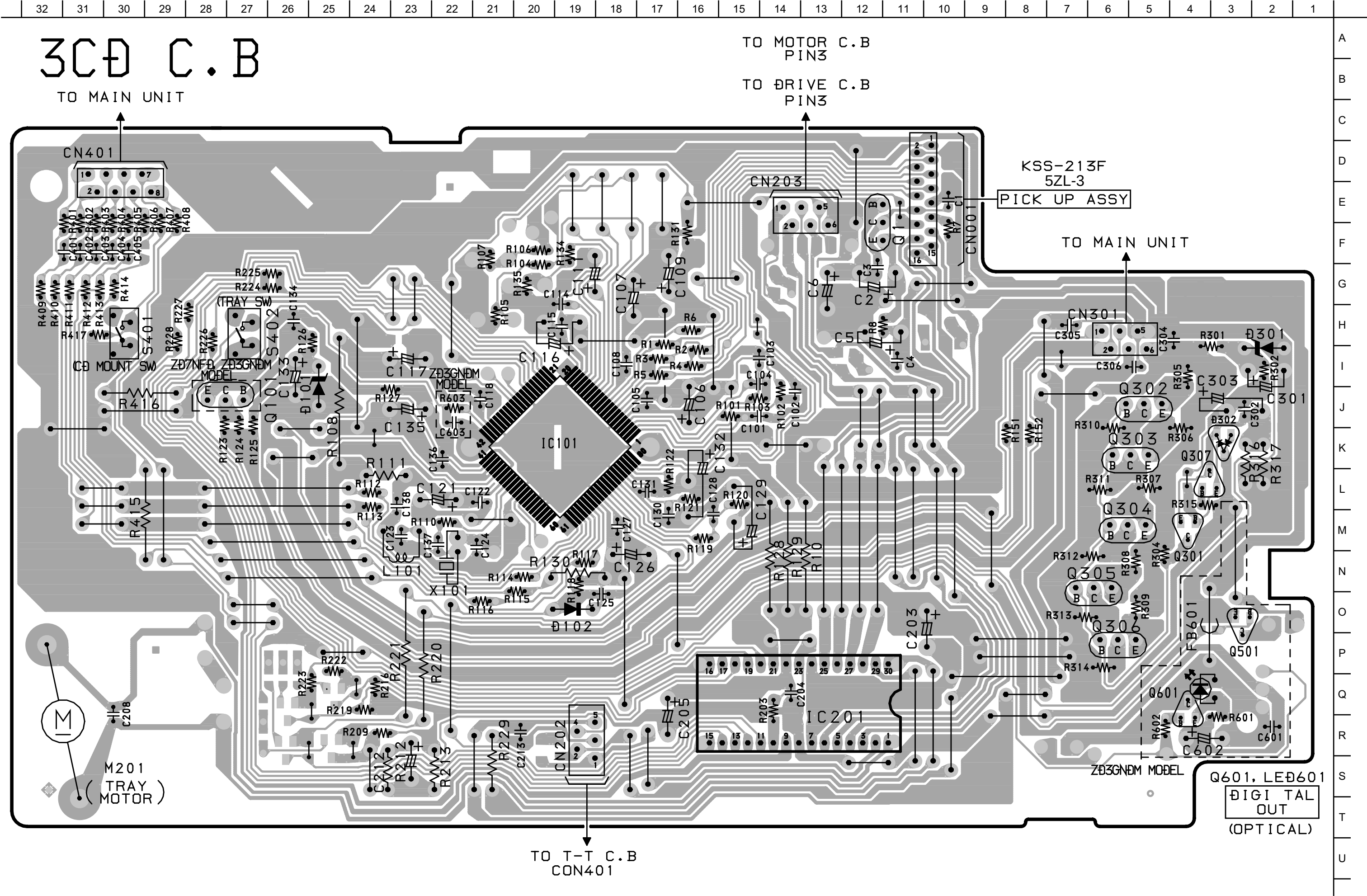
2SC3052  
2SA1235

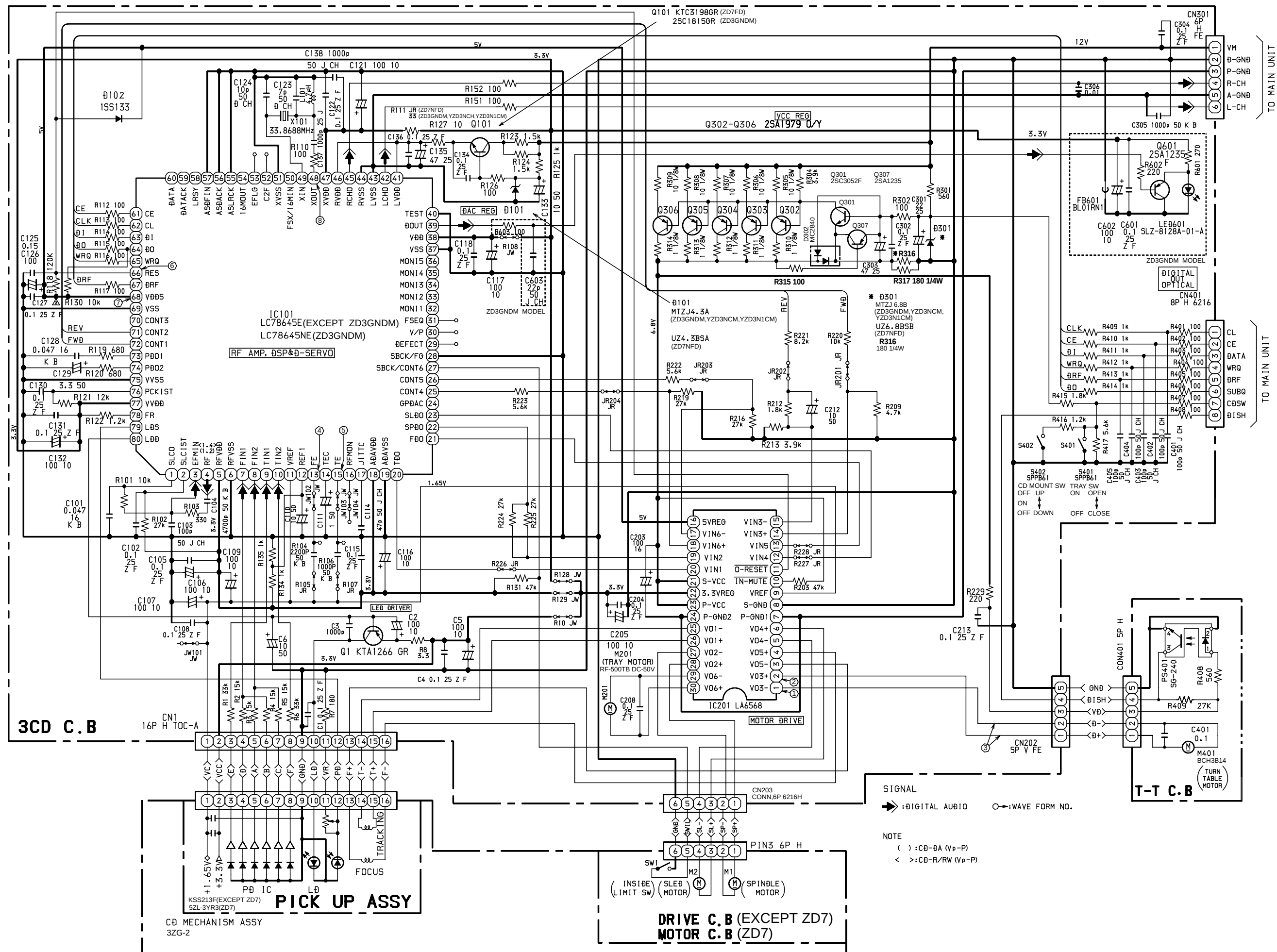


KTA1266  
KTC3198  
2SA19790



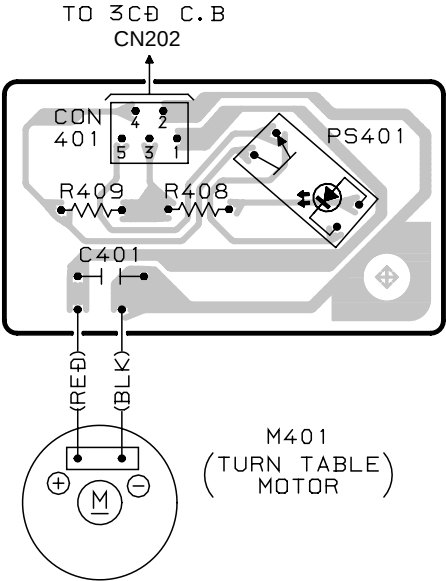
SIGNAL →:DIGITL AUDIO





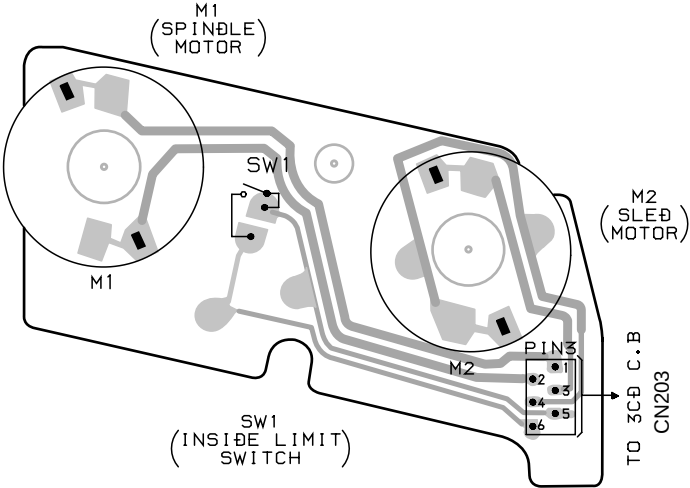
|    |    |    |    |    |    |   |   |   |   |   |   |   |   |   |
|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|
| 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|

T-T C. B(CONDUCTOR SIDE)



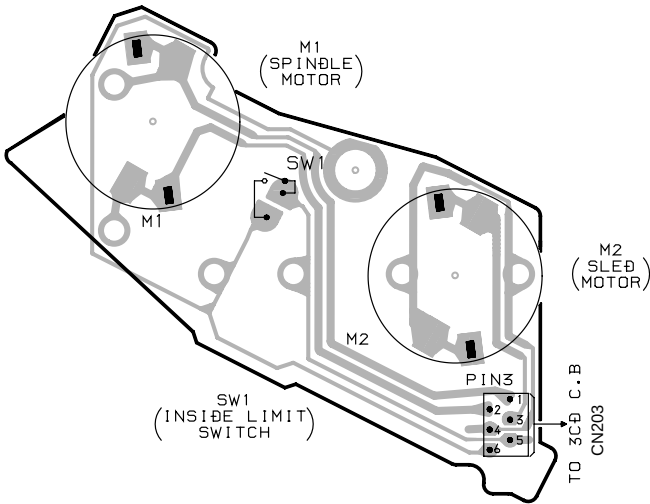
DRIVE C.B EXCEPT ZD7 MODEL

DRIVE C. B(CONDUCTOR SIDE)



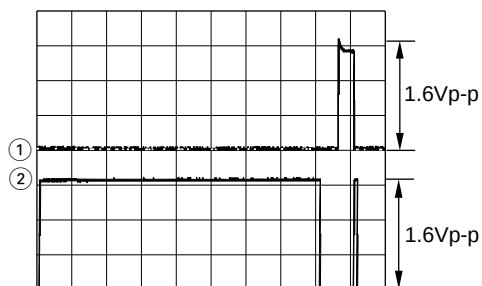
MOTOR C.B ZD7 MODEL

MOTOR C. B (CONDUCTOR SIDE)

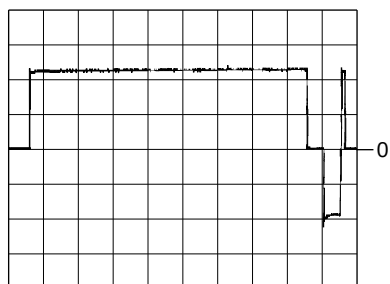


## WAVE FORM-1/1

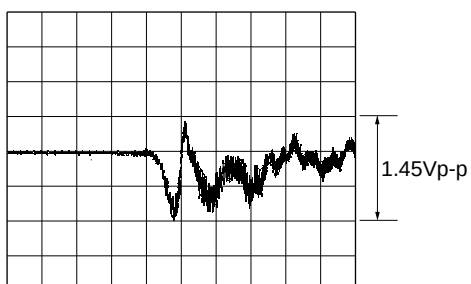
- ① IC201 ① (Vo3-)  
 ② IC201 ② (Vo3+)
- VOLT/DIV: 500mV  
 TIME/DIV: 200mS



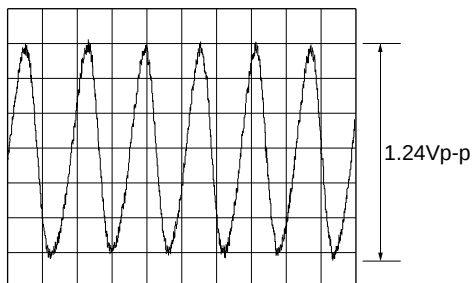
- ③ Between CN202 ① and ②  
 (② Pin: 0 Level)
- VOLT/DIV: 1V  
 TIME/DIV: 200mS



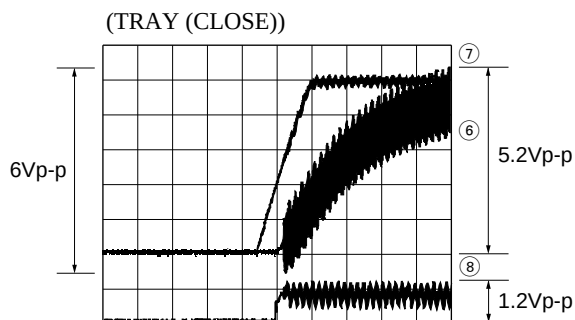
- ④ IC101 ⑬ (FE)
- VOLT/DIV: 500mV  
 TIME/DIV: 5mS



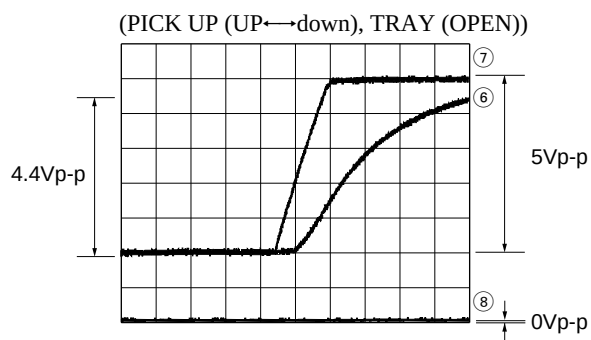
- ⑤ IC101 ⑮ (TE)
- VOLT/DIV: 200mV  
 TIME/DIV: 200μS



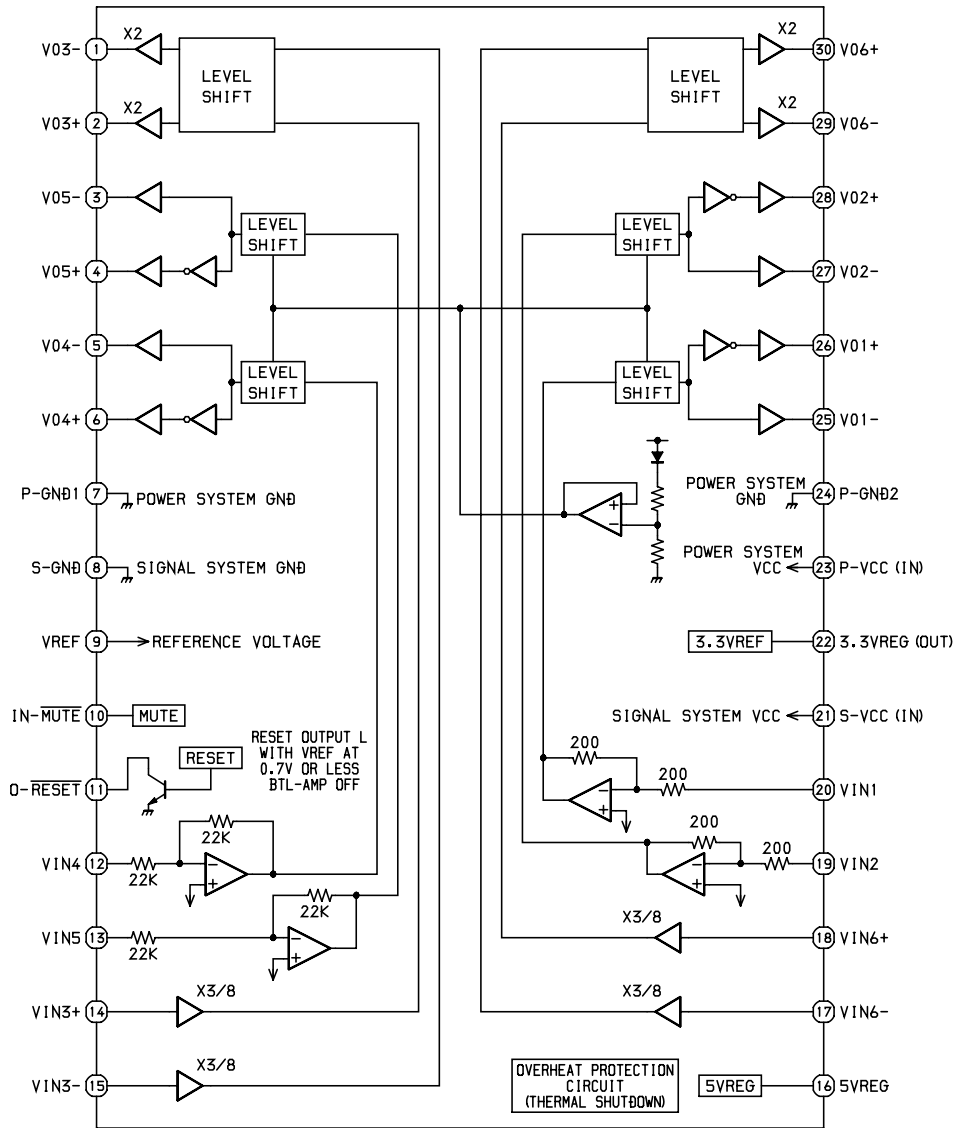
- ⑥ IC101 ⑥⑥ (RES)  
 ⑦ IC101 ⑥⑧ (VDD5)  
 ⑧ IC101 ④⑧ (XOUT)
- VOLT/DIV: 1V  
 TIME/DIV: 10mS



- ⑥ IC101 ⑥⑥ (RES)  
 ⑦ IC101 ⑥⑧ (VDD5)  
 ⑧ IC101 ④⑧ (XOUT)
- VOLT/DIV: 1V  
 TIME/DIV: 10mS



IC BLOCK DIAGRAM-1/1  
IC, LA6568



# IC DESCRIPTION-1/1 (LC78645)-1/2

| Pin No. | Pin Name   | I/O | Description                                                                                                                                                                                  |                                                         |
|---------|------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| 1       | SLCO       | O   | Slice level control                                                                                                                                                                          | Control output.                                         |
| 2       | SLCIST     | I   |                                                                                                                                                                                              | SLCO output current adjustment resistor connection pin. |
| 3       | EFMIN      | I   |                                                                                                                                                                                              | RF signal input pin.                                    |
| 4       | RF         | O   | RF monitor pin.                                                                                                                                                                              |                                                         |
| 5       | RFVDD      | —   | RF power supply pin.                                                                                                                                                                         |                                                         |
| 6       | RFVSS      | —   | RF ground pin.                                                                                                                                                                               |                                                         |
| 7       | FIN1       | I   | A+C signal input pin.                                                                                                                                                                        |                                                         |
| 8       | FIN2       | I   | B+D signal input pin.                                                                                                                                                                        |                                                         |
| 9       | TIN1       | I   | E signal input pin.                                                                                                                                                                          |                                                         |
| 10      | TIN2       | I   | F signal input pin.                                                                                                                                                                          |                                                         |
| 11      | VREF       | O   | VREF voltage output pin.                                                                                                                                                                     |                                                         |
| 12      | REFI       | I   | Reference voltage output setting pin.                                                                                                                                                        |                                                         |
| 13      | EF         | O   | FE signal monitor pin.                                                                                                                                                                       |                                                         |
| 14      | TEC        | O   | TE signal LPF capacitor connection pin.                                                                                                                                                      |                                                         |
| 15      | TE         | O   | TE signal monitor pin.                                                                                                                                                                       |                                                         |
| 16      | RFMON      | O   | RF internal signal monitor pin.                                                                                                                                                              |                                                         |
| 17      | JITTC      | O   | Jitter detection capacitor connection pin.                                                                                                                                                   |                                                         |
| 18      | ADAVDD     | —   | Servo A/D, D/A supply pin.                                                                                                                                                                   |                                                         |
| 19      | ADAVSS     | —   | Servo A/D, D/A ground pin.                                                                                                                                                                   |                                                         |
| 20      | TDO        | O   | Tracking control output pin. D/A output.                                                                                                                                                     |                                                         |
| 21      | FDO        | O   | Focus control output pin. D/A output.                                                                                                                                                        |                                                         |
| 22      | SPDO       | O   | Spindle control output pin. D/A output.                                                                                                                                                      |                                                         |
| 23      | SLDO       | O   | Thread control output pin. D/A output.                                                                                                                                                       |                                                         |
| 24      | GPDAC      | O   | Servo D/A general-purpose output pin. (Not connected)                                                                                                                                        |                                                         |
| 25, 26  | CONT4, 5   | I/O | General-purpose input/output pin 4, 5.                                                                                                                                                       |                                                         |
| 27      | SBCK/CONT6 | I/O | General-purpose input/output pin 6, or subcode read clock input pin.                                                                                                                         |                                                         |
| 28      | SBCK/FG    | I   | Subcode read clock input pin/FG signal input pin/external emphasis setting pin.<br>Set to command -pin function.                                                                             |                                                         |
| 29      | DEFECT     | O   | Defect pin.                                                                                                                                                                                  |                                                         |
| 30      | V/P        | O   | Rough servo/phase control automatic switching monitor output pin.<br>“H” for rough servo and “L” for phase servo.                                                                            |                                                         |
| 31      | FSEQ       | O   | Synchronization signal detection output pin.<br>Outputs a high level when the synchronization signal detected from the EFM signal and the internally generated synchronization signal agree. |                                                         |
| 32, 36  | MONI1, 5   | O   | Internal signal monitor pin 1, 5. (Not connected)                                                                                                                                            |                                                         |
| 37      | VSS        | —   | Digital ground pin.                                                                                                                                                                          |                                                         |
| 38      | VDD        | —   | Digital power supply pin.                                                                                                                                                                    |                                                         |
| 39      | DOUT       | O   | Digital OUT output pin.                                                                                                                                                                      |                                                         |
| 40      | TEST       | I   | Test input pin.                                                                                                                                                                              |                                                         |
| 41      | LVDD       | —   | L channel D/A converter                                                                                                                                                                      | L channel power supply pin.                             |
| 42      | LCHO       | O   |                                                                                                                                                                                              | L channel output pin.                                   |

# IC DESCRIPTION-1/1 (LC78645)-2/2

| Pin No. | Pin Name  | I/O | Description                                                                                     |                                                                     |
|---------|-----------|-----|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| 43      | LVSS      | —   | L channel D/A converter                                                                         | L channel ground pin.                                               |
| 44      | RVSS      | —   | R channel D/A converter                                                                         | R channel ground pin.                                               |
| 45      | RCHO      | O   |                                                                                                 | R channel output pin.                                               |
| 46      | RVDD      | —   |                                                                                                 | R channel power supply pin.                                         |
| 47      | XVDD      | —   | Crystal oscillator                                                                              | Crystal oscillator power supply pin.                                |
| 48      | XOUT      | O   |                                                                                                 | Connection for a 33.8688MHz crystal oscillator pin.                 |
| 49      | XIN       | I   |                                                                                                 |                                                                     |
| 50      | FSX/16MIN | I/O | 7.35kHz synchronization signal output pin.<br>DF, DAC external clock input pin. (Not connected) |                                                                     |
| 51      | XVSS      | —   | Crystal oscillator                                                                              | Crystal oscillator ground pin.                                      |
|         |           |     |                                                                                                 | Must be connected to 0V.                                            |
| 52      | C2F       | O   | C2 flag output pin.                                                                             |                                                                     |
| 53      | EFLG      | O   | C1, C2 error correction monitor pin.                                                            |                                                                     |
| 54      | 16MOUT    | O   | 16.9344MHz output pin. (Not connected)                                                          |                                                                     |
| 55      | ASLRCK    | I   | Antishock mode                                                                                  | L/R clock input pin.                                                |
| 56      | ASDACK    | I   |                                                                                                 | Bit clock input pin.                                                |
| 57      | ASDFIN    | I   |                                                                                                 | L/R channel data input pin.                                         |
| 58      | LRSY      | O   | Digital data output                                                                             | L/R clock output pin. (Not connected)                               |
| 59      | DATAACK   | O   |                                                                                                 | Bit clock output pin. (Not connected)                               |
| 60      | DATA      | O   |                                                                                                 | L/R channel data output pin. (Not connected)                        |
| 61      | CE        | I   | Microprocessor interface                                                                        | Chip enable signal input pin.                                       |
| 62      | CL        | I   |                                                                                                 | Data transfer clock input pin.                                      |
| 63      | DI        | I   |                                                                                                 | Data input pin.                                                     |
| 64      | DO        | O   |                                                                                                 | Data output pin. (Nch open drain output)                            |
| 65      | WRQ       | O   |                                                                                                 | Interruption signal output pin.                                     |
| 66      | RES       | I   | Reset input pin.<br>This pin must be set low briefly after power is first applied.              |                                                                     |
| 67      | DRF       | O   | Focus ON detect pin.                                                                            |                                                                     |
| 68      | VDD5      | —   | Microprocessor interface power supply pin.                                                      |                                                                     |
| 69      | VSS       | —   | Digital ground pin.                                                                             |                                                                     |
| 70      | CONT3     | I/O | General-purpose output pin 3. (Not connected)                                                   |                                                                     |
| 71, 72  | CONT2, 1  | I/O | General-purpose output pin 2, 1.                                                                |                                                                     |
| 73, 74  | PD01, 2   | O   | PLL                                                                                             | Phase comparison output pin 1, 2 to control built-in VCO.           |
| 75      | VVSS      | —   |                                                                                                 | Built -in VCO GND pin.                                              |
| 76      | PCKIST    | I   |                                                                                                 | Resistor connection pin to set current for PD01 and 02 outputs.     |
| 77      | VVDD      | —   |                                                                                                 | Built-in VCO power supply pin.                                      |
| 78      | FR        | I   |                                                                                                 | Resistor connection pin to set the frequency range of built-in VCO. |
| 79      | LDS       | I   | Laser power detection signal input pin.                                                         |                                                                     |
| 80      | LDD       | O   | Laser power control signal output pin.                                                          |                                                                     |

# ELECTRICAL MEASUREMENT

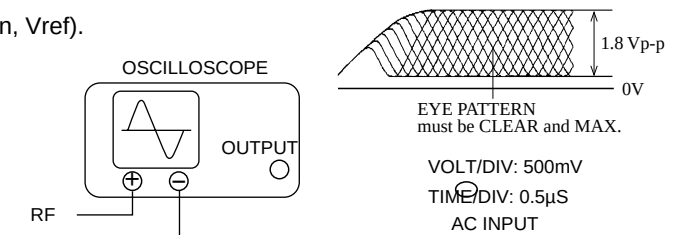
- Perform the adjustments after the machine enters the test mode.
- Place the CD mechanism horizontally level.
- Equipment and tools required

Measuring equipment: Oscilloscope (Use the probe of 10:1)  
 Digital Multimeter (Use it in the DC Volt range.)  
 Jitter meter (Kikusui 6235 or equivalent)

Test disc: TCD-782  
 ATD-001

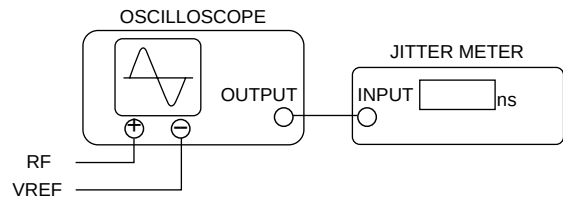
## 1. RF Waveform Check

- 1) Connect an oscilloscope to test point (IC101 4pin, RF), (IC101 11pin, Vref).
- 2) Play back the 2nd track of the TCD-782.
- 3) Check to see that the RF waveform has the maximum amplitude and the center of the wedge waveform has the clear blank.



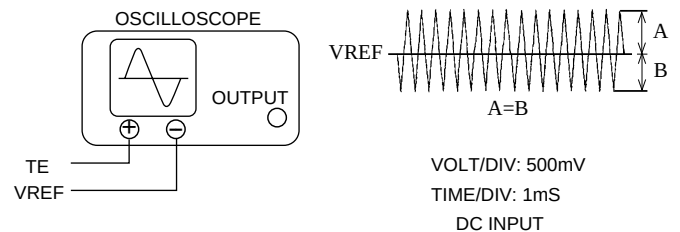
## 2. Jitter Check

- 1) While an oscilloscope is kept connected in the same test point as in the 2. RF Waveform Check, connect the output terminal of an oscilloscope to the input terminal of a jitter meter.
- 2) Set the VOLT range selector of an oscilloscope to 500 mV range or lower.
- 3) Play back the 2nd track of the TCD-782.
- 4) Check to see that a jitter meter indicates 40.0 ns or less.



## 3. Tracking Balance Check

- 1) Connect an oscilloscope to test point (TE), (VREF).
- 2) Play back the 2nd track of the TCD-782 and press the PAUSE button.
- 3) Check to see that the traverse waveform on an oscilloscope is vertically symmetrical.



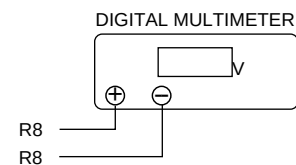
## 45. Play-ability Check

- 1) Play back the 4th, 9th and 13th track of ATD-001. Check to see that noise does not occur and sound skipping does not occur.

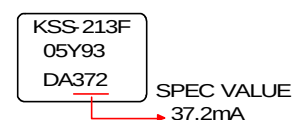
## 6. Laser Current Check

\*Do not perform this measurement unless the laser is suspected to be defective.

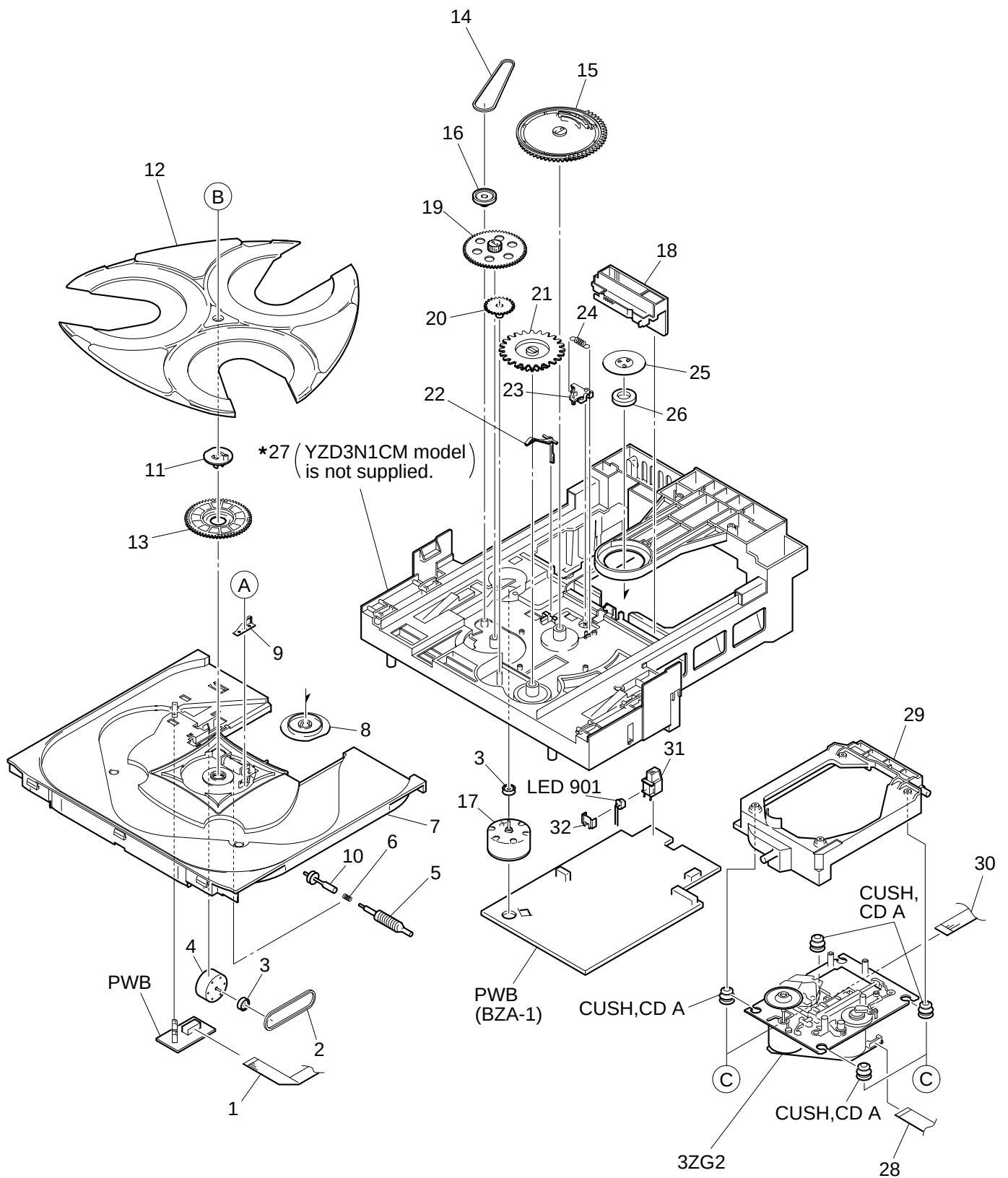
- 1) Connect a Digital Multimeter across the resistor R8 (3.3 ohms).
- 2) Play back the TCD-782 and check the DC voltage value on a Digital Multimeter.
- 3) Calculate the laser current (Iop) by dividing the DC voltage across R8 by the resistor value.  
 Laser current (Iop) = DC voltage across R8 divided by the resistor value (3.3 ohms).  
 5ZL-3 R3 : Check to see that the laser current (Iop) is 80 mA or less.  
 KSS-213F : Check to see that the laser current (Iop) is SPEC VALUE +15%.  
 (Refer to the EXAMPLE)



EXAMPLE



# MECHANICAL EXPLODED VIEW-1/1



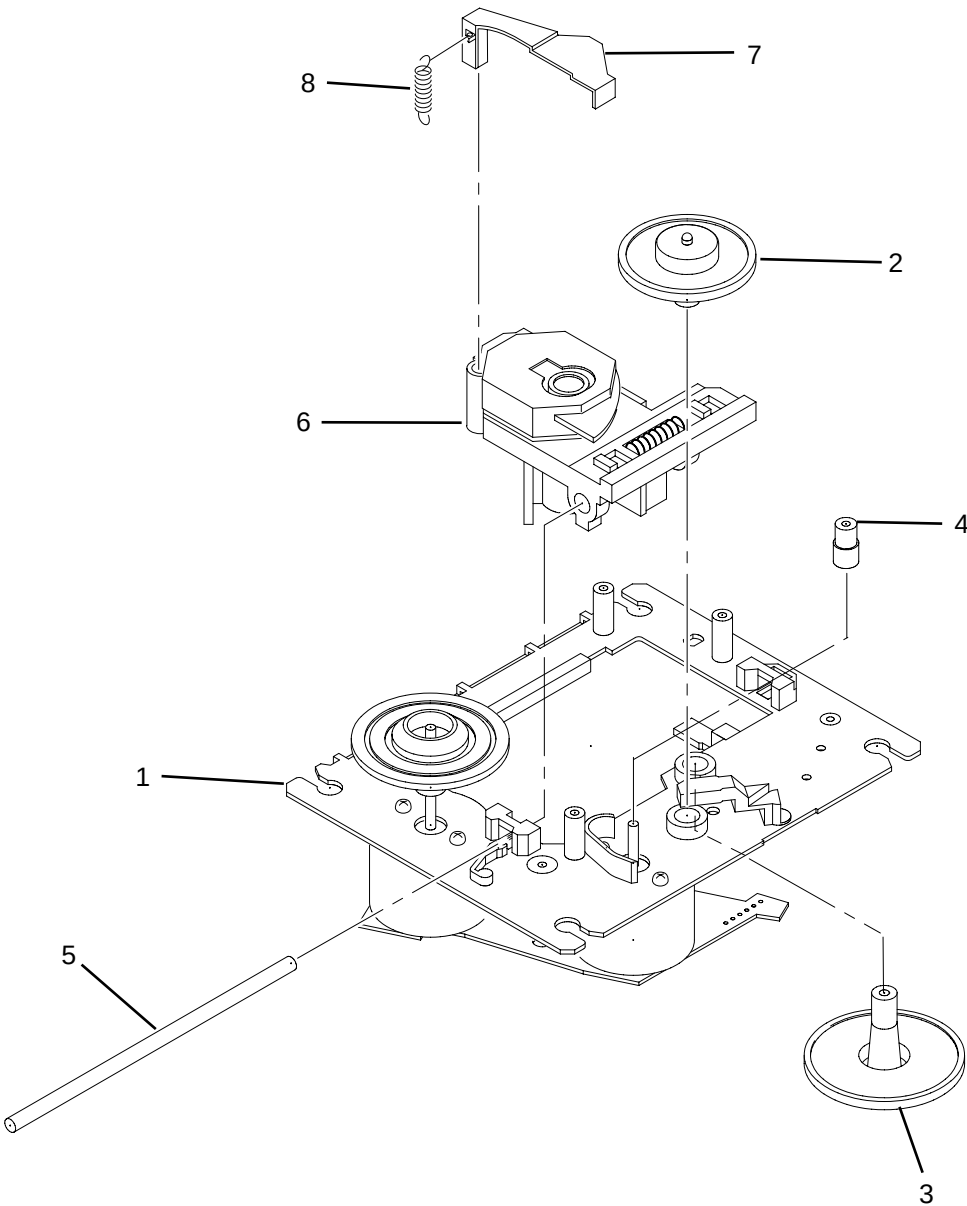
# MECHANICAL PARTS LIST-1/1

| REF. NO | PART NO.       | KANRI NO. | DESCRIPTION                         | REF. NO | PART NO.       | KANRI NO. | DESCRIPTION                       |
|---------|----------------|-----------|-------------------------------------|---------|----------------|-----------|-----------------------------------|
| 1       | 84-ZG1-672-010 |           | F-CABLE,5P 1.25 210MM WHITE N       | 19      | 84-ZG1-274-010 |           | GEAR,RELAY 8                      |
| 2       | 84-ZG1-225-010 |           | BELT,SQ1.0-63.3                     | 20      | 81-ZG1-291-110 |           | GEAR,TRAY RELAY NO3               |
| 3       | 84-ZG1-267-010 |           | PULLEY,LOAD MO 8                    | 21      | 84-ZG1-205-210 |           | GEAR,TRAY (*)                     |
| 4       | 87-045-364-010 |           | MOTOR(BCH3B14)                      | 22      | 83-ZG3-213-010 |           | LVR,SW                            |
| 5       | 84-ZG1-238-010 |           | GEAR,WORM N                         | 23      | 84-ZG1-208-210 |           | LEVER,CAM<ZD7NFD>                 |
| 6       | 84-ZG1-248-010 |           | SPR-C,WORM                          | 23      | 84-ZG1-266-010 |           | LEVER,CAN 8<EXCEPT ZD7NFD>        |
| 7       | 8B-ZG9-001-010 |           | TRAY,GRA<ZD3GNDM>                   | 24      | 84-ZG1-211-010 |           | SPR-E CAM S                       |
| 7       | 8A-ZG1-001-010 |           | TRAY,NO3 BLU<EXCEPT ZD3GNDM>        | 25      | 84-ZG1-285-010 |           | PLATE,MAGNET BLK<YZD3N1CM>        |
| 8       | 84-ZG1-291-110 |           | HLD R,MAGNET 4 NAT<EXCEPT YZD3N1CM> | 25      | 81-ZG1-255-110 |           | PLATE,MAGNET MK2<EXCEPT YZD3N1CM> |
| 8       | 84-ZG1-283-110 |           | HLD R,MAGNET V 4<YZD3N1CM>          | 26      | 83-ZG3-604-010 |           | RING,MAG 2                        |
| 9       | 84-ZG1-259-010 |           | SPR-P,WORM                          | *27     | 84-ZG1-286-010 |           | CHAS,MECHA NAT<EXCEPT YZD3N1CM>   |
| 10      | 84-ZG1-239-210 |           | PULLY,WORM N                        | 28      | 84-ZG1-630-010 |           | CABLE FFC 6P-1.25                 |
| 11      | 84-ZG1-224-010 |           | LEVER,TT<YZD3N1CM>                  | 29      | 84-ZG1-287-010 |           | HLD R,MECHA NAT<EXCEPT YZD3N1CM>  |
| 11      | 84-ZG1-288-010 |           | LEVER,TT NAT<EXCEPT YZD3N1CM>       | 29      | 84-ZG1-212-210 |           | HLD R,MECHA NO2<YZD3N1CM>         |
| 12      | 8B-ZG5-001-010 |           | TURN TABLE,GRA<ZD3GNDM>             | 30      | 85-NFT-611-110 |           | FF-CABLE 16P-1.0                  |
| 12      | 8A-ZG1-002-110 |           | TURN TABLE,NO1 BLU<EXCEPT ZD3GNDM>  | 31      | 84-ZG1-244-310 |           | CABI,OPTICAL<ZD3GNDM>             |
| 13      | 84-ZG1-221-010 |           | GEAR,MAIN TT<ZD7NFD>                | 32      | 84-ZG1-261-010 |           | LID,OPTICAL<ZD3GNDM>              |
| 13      | 84-ZG1-269-010 |           | GEAR,MAIN TT 4<EXCEPT ZD7NFD>       | A       | 87-067-981-010 |           | BVT2+3-6 BLK                      |
| 14      | 84-ZG1-209-010 |           | BELT,SQ1.8-117.7                    | B       | 87-B10-331-010 |           | VF+3-6 BLK                        |
| 15      | 84-ZG1-203-410 |           | GEAR,MAIN CAM<EXCEPT YZD3N1CM>      | C       | 81-ZG1-271-010 |           | S-SCREW MECH REAR                 |
| 15      | 8A-ZG1-218-010 |           | GEAR,MAIN CAM BLU 4<YZD3N1CM>       |         |                |           |                                   |
| 16      | 84-ZG1-207-010 |           | PULLEY,RELAY                        |         |                |           |                                   |
| 17      | 87-045-305-010 |           | MOTOR, RF-500TB DC-5V (2MA)         |         |                |           |                                   |
| 18      | 84-ZG1-216-310 |           | SLIDE,MECHA CAM YEL<YZD3N1CM>       |         |                |           |                                   |
| 18      | 84-ZG1-204-310 |           | SLIDER,MECHA CAM<EXCEPT YZD3N1CM>   |         |                |           |                                   |

**COLOR NAME TABLE**

| Basic color symbol | Color             | Basic color symbol | Color              | Basic color symbol | Color              |
|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|
| B                  | Black             | C                  | Cream              | D                  | Orange             |
| G                  | Green             | H                  | Gray               | L                  | Blue               |
| LT                 | Transparent Blue  | N                  | Gold               | P                  | Pink               |
| R                  | Red               | S                  | Silver             | ST                 | Titan Silver       |
| T                  | Brown             | V                  | Violet             | W                  | White              |
| WT                 | Transparent White | Y                  | Yellow             | YT                 | Transparent Yellow |
| LM                 | Metallic Blue     | LL                 | Light Blue         | GT                 | Transparent Green  |
| LD                 | Dark Blue         | DT                 | Transparent Orange | GM                 | Metallic Green     |
| YM                 | Metallic Yellow   | DM                 | Metallic Orange    | PT                 | Transparent Pink   |
| LA                 | Aqua Blue         | GL                 | Light Green        |                    |                    |

MECHANISM EXPLODED VIEW 1/2 (3ZG-2)



## CD MECHANISM PARTS LIST-1/2 (3ZG-2)

| REF. NO | PART NO.       | KANRI<br>NO. | DESCRIPTION             |
|---------|----------------|--------------|-------------------------|
| 1       | 83-ZG2-262-010 |              | CHAS ASSY,E3            |
| 2       | 83-ZG2-235-010 | 0E           | GEAR,A3                 |
| 3       | 83-ZG2-205-210 | 0E           | GEAR,B                  |
| 4       | 83-ZG2-236-010 | 0E           | GEAR,MOTOR 3            |
| 5       | 83-ZG2-253-110 | 0E           | SHAFT,SLIDE 5           |
| 6       | M8-5ZL-395-000 | 2Y           | 5ZL-3 YR3<E7NF >        |
| 6       | 87-A90-836-010 | 2Y           | PICKUP,KSS-213F<E3NM >  |
| 7       | 83-ZG2-245-510 | 1A           | LEVER,SHUTTER(*)<E3NM > |
| 8       | 83-ZG2-250-210 | 0E           | SPR-E,SHT 2<E3NM >      |

アイワ株式会社 〒110-8710 東京都台東区池之端1-2-11 ☎03(3827)3111 (代表)  
**AIWA CO.,LTD.** 2-11, IKENOHATA 1-CHOME, TAITO-KU, TOKYO 110-8710, JAPAN TEL:03 (3827) 3111